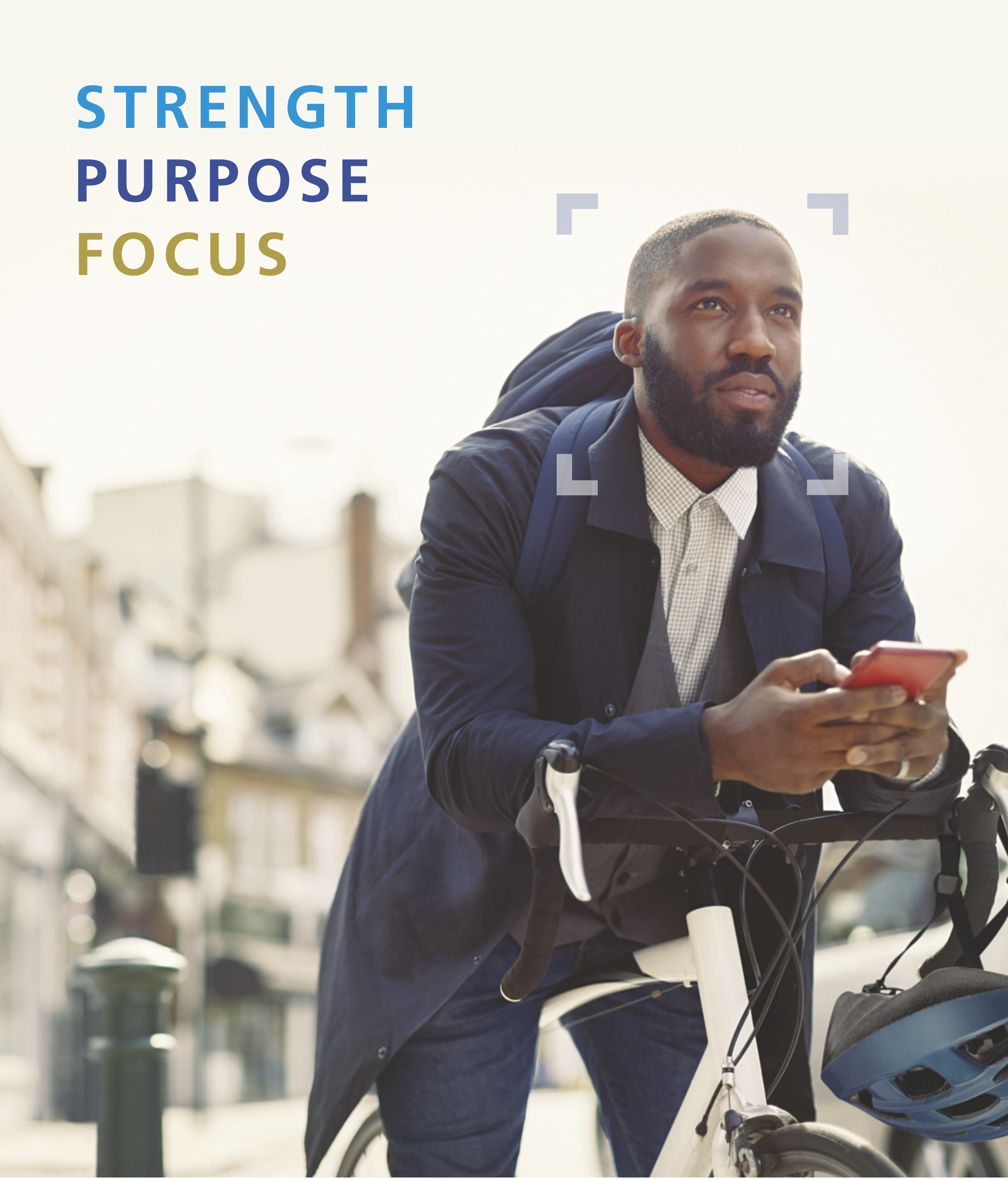
STRENGTH
PURPOSE
FOCUS



GREAT-WEST LIFECO INC.

2018 ANNUAL REPORT

CORPORATE PROFILE

Great-West Lifeco is an international financial services holding company with interests in life insurance, health insurance, retirement and investment services, asset management and reinsurance businesses.

Great-West Lifeco has operations in Canada, the United States and Europe through Great-West Life, London Life, Canada Life, Irish Life, Great-West Financial and Putnam Investments. Great-West Lifeco and its companies have approximately $1.4 trillion in consolidated assets under administration and are members of the Power Financial Corporation group of companies. Great-West Lifeco trades on the Toronto Stock Exchange (TSX) under the ticker symbol GWO.

CONTENTS

The financial information in this report is presented in millions of Canadian dollars for the period ended December 31, 2018 unless otherwise indicated.

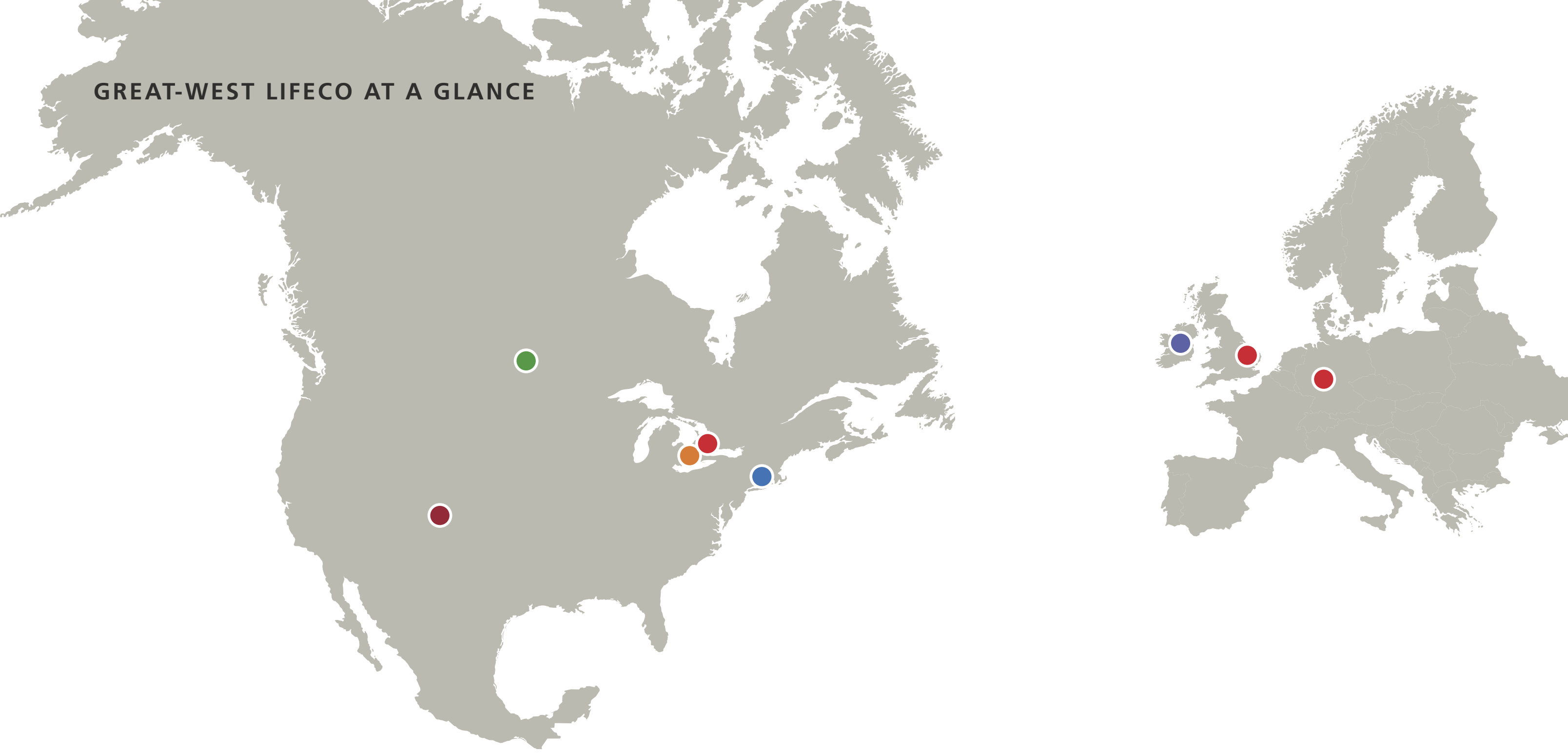
Readers are referred to the Cautionary Notes regarding forward-looking information and non-IFRS financial measures on page 16.

More online

Visit our website to get a digital copy of our annual report and access more information, such as our current credit ratings.

greatwestlifeco.com

We continue to develop deeper insight into the evolving needs of our customers and advisors. We're responding with products and services that allow customers the freedom to connect with us how and when they want.



STRENGTH IN THE MARKETS WHERE WE DO BUSINESS

Great-West Lifeco operates in Canada, the United States and Europe through Great-West Life, London Life, Canada Life, Irish Life, Great-West Financial and Putnam Investments.

The map shows Great-West Lifeco's operating company headquarters in Canada, the United States and Europe.

The Great-West Life Assurance Company	Established 1891
London Life	Established 1874
Canada Life	Established 1847
Great-West Financial	Established 1907
Putnam Investments	Established 1937
Irish Life	Established 1939

$32+ billion

BENEFITS PAID TO CUSTOMERS

31+ million

CUSTOMER RELATIONSHIPS

24,200

EMPLOYEES

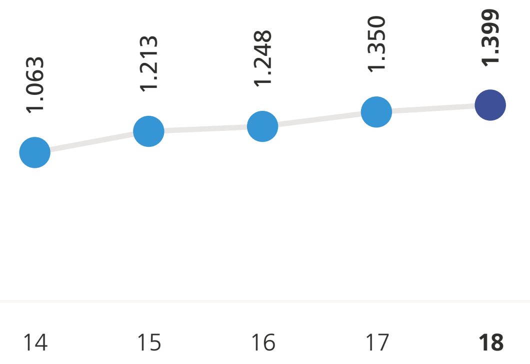
240,000

ADVISOR RELATIONSHIPS

SOLID PERFORMANCE ACROSS OUR BUSINESSES

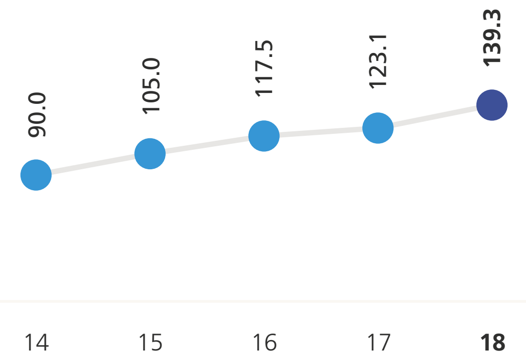
Total Assets Under Administration

$1.399 trillion



Premiums and Deposits

$139.3 billion



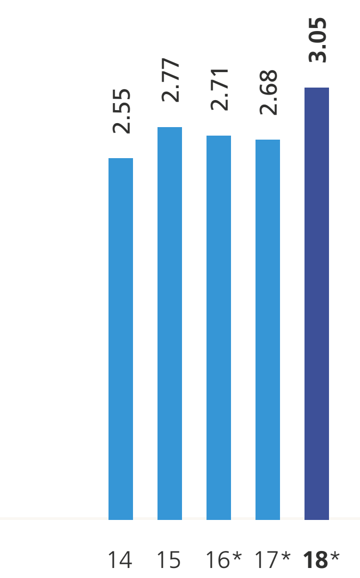
STRENGTH OF OUR BUSINESS

- History of consistent achievements resulting in sustained earnings growth
- Highly diversified portfolio by geography, channel and type
- Market leadership driven by strong business franchises and brands
- Strategies to drive growth through innovation and disciplined capital deployment
- Strong risk management culture and operational discipline
- Experienced and talented management team and board of directors
- Strong capital position and financial flexibility

DELIVERING SHAREHOLDER VALUE

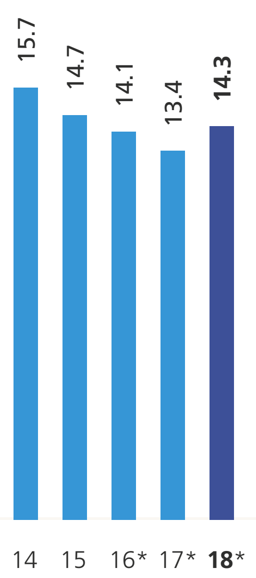
Earnings Per Common Share

$3.05



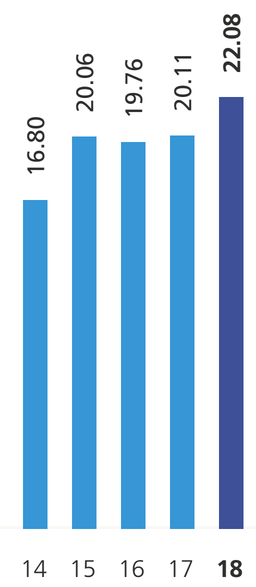
Return on Common Shareholders' Equity

14.3%



Book Value Per Common Share

$22.08

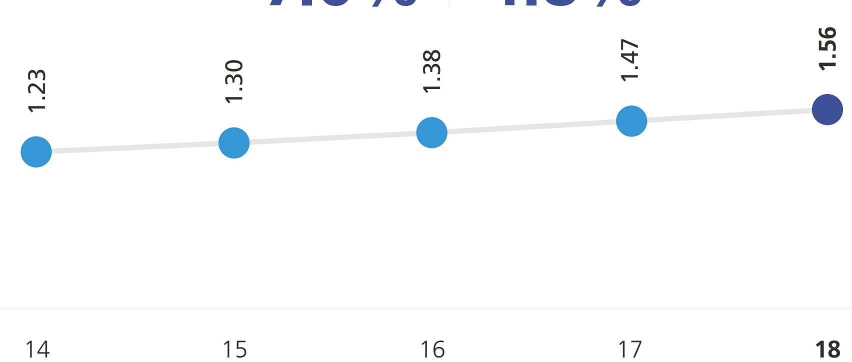


*Presented on an adjusted basis, a non-IFRS measure.

DIVIDENDS PAID

Great-West Lifeco has a consistent record of increasing dividends. Common shares had an annual dividend yield of 5.0% at December 31, 2018.

Compound annual growth rate *15-year:* **7.0%** *5-year:* **4.8%**



($ per share)

STRENGTH, PURPOSE AND FOCUS

Jeffrey Orr
Chair of the Board

Paul Mahon
President and Chief Executive Officer

Great-West Lifeco delivered solid results across all of our businesses in 2018. We maintained our strong capital position and industry-leading credit ratings. This strength and stability positions us to extend and grow our business. We have a clear purpose to meet the diverse and changing needs of our customers and advisors. This purpose along with disciplined execution of our strategy is the key to building long-term shareholder value.

Over the past decade, our industry has faced a rapid pace of change and challenging economic conditions. Yet throughout, our company has been building momentum and is well-placed to enhance our leading position.

As we move forward with our strategy, we are deploying capital to both strengthen and extend existing businesses and to capture new and emerging growth opportunities. To remain competitive, we must respond to changing customer expectations being reshaped by generational shifts, advances in technology and evolving regulation. At the heart of this change is our focus on making it easier for our customers and advisors to work with us to achieve their goals.

Investing for growth

Across our companies, we're deploying capital through both strategic investments in existing businesses and mergers and acquisitions (M&A) to reshape our growth profile.

Our M&A activities are focused on deploying capital in businesses that better align with our strategic and shareholder growth objectives. A great example was the acquisition of Retirement Advantage in the U.K. where we increased scale in an existing business while expanding our business model to include high growth equity release mortgage products. This new product provides our customers with the freedom to stay in their homes while accessing some of their property's underlying equity value to enhance their retirement income. This is a good example of how our customers are better served by a more diversified product mix. Another example is the recently announced disposition of our individual life insurance and annuity business in the United States via reinsurance. This transaction, expected to close in the second quarter of 2019, will further strengthen our capital position and will allow us to focus on the U.S. retirement and asset management markets.

Responding through innovation

We are responding to customer needs with innovative products and services that are relevant at all stages of life. In Canada, we introduced our new student debt savings program to the employees of Indigo nation-wide. Through the program, Indigo will match a recently-graduated employee's student loan repayments with a contribution to that employee's retirement savings plan, helping set new graduates up for future financial success.

In the U.S., our Empower group retirement savings business is broadening its health savings account offerings to include digitally-enabled services for employees of the companies they serve, allowing them to see at a glance what their projected health care costs may be in retirement. The streamlined experience

Strong governance

Great-West Lifeco believes good corporate governance is essential to creating consistently strong long-term performance and positive outcomes for customers and shareholders.

We thank our Directors for their valuable contribution to the governance and affairs of our companies.

At our 2018 Annual Meeting we announced the retirement of two Directors. Rima Qureshi was a Director for two years, serving on the Executive, Investment and Risk Committees. Henri-Paul Rousseau was a Director for nine years, also serving on the Executive, Investment and Risk Committees.

At the 2018 Annual Meeting, three new Directors were elected: Michael Amend, Elizabeth Lempres and Paula Madoff. Mr. Amend is the President, Online, Lowe's Companies, Inc. Ms. Lempres is Senior Partner Emeritus of McKinsey where she spent 28 years. Most recently, she led McKinsey's global Private Equity and Principal Investors Practice until her retirement in September 2017. Ms. Madoff is an Advisory Director at Goldman Sachs where she spent 24 years. Most recently, she was a Partner and Head of Sales Distribution for Interest Rate Products and Mortgages until her retirement in 2017.

helps the employer and their employees identify gaps in savings and implement strategies to address those gaps.

Across our enterprise, we are pursuing investments in innovative technologies that digitally enable our customers and advisors.

In Canada, strategic investments in new digital labs focused on product and process improvements have produced impressive results. The labs enable us to rapidly deliver relevant solutions that improve the customer and advisor experience. In our first digital lab, we worked alongside advisors to create an innovative digital insurance product – SimpleProtect – that allows advisors to work with qualifying customers to secure life insurance coverage in minutes rather than weeks.

In the U.S., the launch of a digital consumer-focused wealth management platform offers Empower Retirement's customers integrated access to investment advice, financial planning and insurance through a single-user experience. This simple, intuitive interface with an integrated digital service experience can help meet the needs of mass affluent U.S. investors who may not be working with a professional advisor as they make crucial personal financial decisions.

In Ireland, we are responding to customers' changing attitudes towards health with our BeneFit Plan, the first plan of its kind for the health insurance market in Ireland, which rewards customers who are making strides to stay healthy by giving them discounts on fitness wearables, dieticians and sports clubs.

Investing in our people and a more sustainable future

Our people are core to our success. That is why we are investing in the tools and training they need to deliver on our strategy. We are also committed to promoting a diverse and inclusive work environment that fully leverages the unique talents and perspectives of all employees.

At the same time, we find inspiration in our people as they give back to the communities where they work and live. Through investments in charitable initiatives, support of volunteer efforts and environmentally responsible choices, we are building a stronger community together.

What success looks like

While challenging economic conditions and a constantly changing world create uncertainty, our solid foundation has us well-positioned for continued growth and success. In the pages that follow, you will read stories about how we are implementing our strategy to meet the changing needs of our customers, advisors and employees. You will see that our strength, purpose and focus are the pillars upon which we are building shareholder value.

Thank you

We thank our customers and our shareholders for putting their trust in us. We also thank our employees and advisors for their dedication and commitment to meeting the needs of our customers.

Jeffrey Orr
Chair of the Board

Paul Mahon
President and
Chief Executive Officer

ADAPTING

Retirement solutions for any stage of life

Empower Retirement launches integrated, personalized advice and planning solution

Empower Retirement launched My Total Retirement, an end-to-end retirement management experience designed to help plan participants set saving goals for each stage of life. The tool allows individuals to view and model their savings as potential future monthly income. Empower pulls real-time data from plan participants' income sources, savings and investment accounts and integrates this information with demographic data to provide a unique planning experience.

Canada Life U.K. Home Finance provides a range of later life mortgages

Canada Life U.K. Home Finance (formerly part of Retirement Advantage) is a new division of Canada Life U.K. offering innovative home finance options which allow customers to release equity from their property, tax-free. These products can be tailored to suit each customer's individual needs, and can be secured on their main residence, second home or a property they rent out. In 2018 over 2,270 customers released around £260 million from their properties, receiving an initial advance of over £100,000 on average. Funds are typically being used to help make home improvements, clear an existing mortgage or enhance their retirement lifestyle.

"We have a solid strategy to guide us and accelerate growth. We're adapting to the evolving needs of our customers and advisors, responding with products and services that provide an exceptional experience."

Jeff Macoun
President and
Chief Operating Officer
Canada

"Great-West Lifeco U.S. is well-positioned to serve an increasingly dynamic marketplace through innovative products and digital enhancements that provide relevant solutions for our customers."

Robert L. Reynolds
Chair
Great-West Lifeco
U.S. LLC

"We continue to sustain strong positions in our European markets through significant investments that drive organic growth and extend our business."

Arshil Jamal
President and
Chief Operating Officer
Europe

Digital solutions for retirement advice

This year, Irish Life introduced a new digital solution for customers who are about to retire. The re-designed tool helps assess the customers' needs, present retirement savings options and make a recommendation. This enables advisors to give better guidance throughout one of the biggest and most important financial decisions customers will make. The outcome is a much better customer experience – with 90% of customers adopting the proposed retirement recommendations.

Irish Life

Empower Retirement continues to innovate for small and growing businesses

EMPOWER RETIREMENT™

In 2018, Empower Retirement created Empower Select™ – a menu of more than 1,000 investment options from some of the most recognized investment managers in the country. The new menu of investment options, in multiple asset classes, packages the select options into ready-to-go design plans. It was created for small and growing businesses interested in saving time and managing costs. The innovative digital platform also lets clients easily view, manage and optimize their plans.

RESPONDING

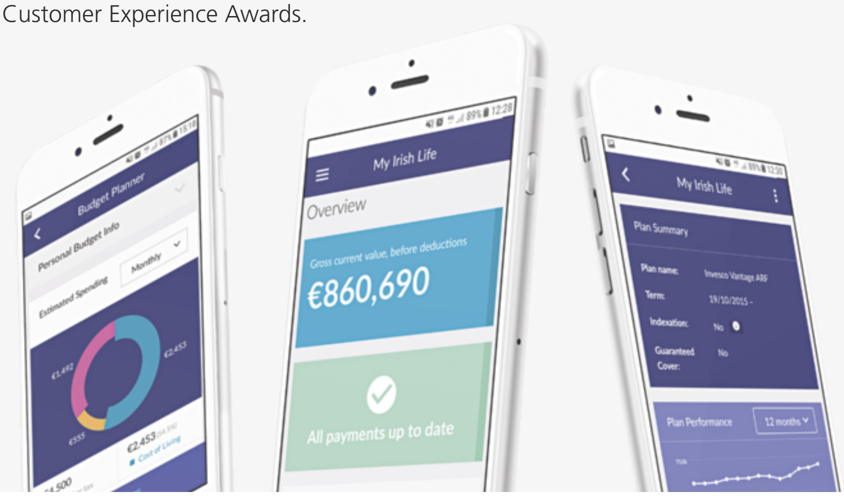
Improving the customer experience

Digital enhancements for a better customer experience

In Canada, Life and Health eEnrolment – a digitally enhanced enrolment system – was released to a small group of early adopters in November. The new system enables plan members to complete enrolment in a matter of minutes using their mobile device or computer, and potentially activate their benefits the same day. This digital enhancement helps offer a market-leading customer experience during enrolment. The system will continue to be enhanced and rolled out throughout 2019.

Enhancing the customer experience

In 2018, Irish Life added new functionality online and in its My Irish Life app. For example, customers can now use online services to resolve 72% of enquiries instead of having to make a phone call. These enhancements are complemented by improved customer communications that include a more engaging design and a warmer tone. The positive impact of these and other customer initiatives was recognized by Irish Life winning Best in Financial Services at the 2018 Irish Customer Experience Awards.



Enhanced GroupNet for Plan Members website

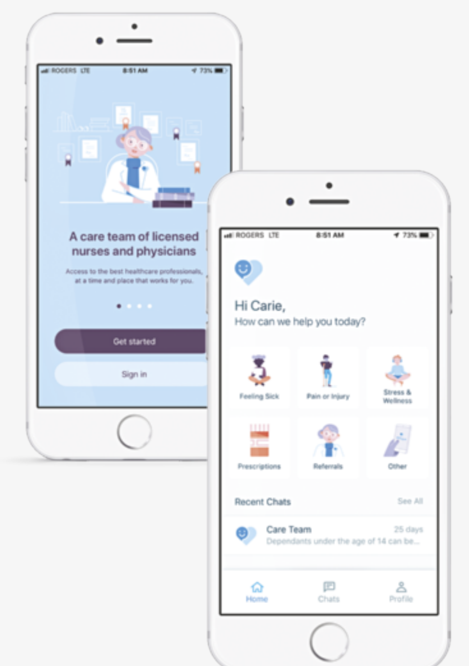
In Canada, the newly streamlined GroupNet for Plan Members website provides plan members access to their Great-West Life benefits faster and easier than before. The new site makes it easier to access information about plan members' benefits, coverage and balances. It's mobile, user-friendly, has a fresh, new design and faster navigation.

Rewarding healthy behaviour is rewarding for Irish Life health business

In 2018, Irish Life launched the BeneFit plan, a first for the health insurance market in Ireland. The plan rewards customers who are making strides to stay healthy by giving them discounts on fitness wearables, dieticians and sports clubs. With healthier lifestyles becoming more popular amongst the younger segments in Ireland, this plan is delivering on sales – with 15% of new customer sales coming from the BeneFit plan range.

The doctor will now see you…virtually

In Canada, an innovative service called Dialogue allows users to access health care providers virtually. Dialogue was originally piloted to select employers in Ontario and Quebec in 2017. Due to increased demand and positive feedback the service was rolled out to 10,000 Great-West Life employees and has been expanded to employers across Canada. The virtual platform connects users through chat and video calls to a team of medical professionals who can diagnose conditions, provide a referral to a specialist or write a prescription.



Global Real Estate

A new global real estate strategy was created to maximize scale and access to investments across regions. For example, through its U.S. subsidiary, GWL Realty Advisors acquired Guggenheim Real Estate LLC and the business of EverWest Real Estate Partners. Paul Finkbeiner, appointed Executive Vice-President, Global Head of Real Estate for Great-West Lifeco in November, will work closely with regional leaders to set a strategic direction and deliver on investment goals across a diverse global real estate investment platform.

INNOVATING

Innovative products help guide our customers

Digital labs delivering for Individual customers

In Canada, a new tool developed through innovative digital labs is providing a simpler and faster way to buy term life insurance. SimpleProtect asks significantly fewer questions and uses express underwriting and instant approvals – allowing advisors more time to focus on their clients. The product was developed with input from advisors and has already rolled out to select Freedom 55 Financial centres. Advisors have provided highly positive feedback about how fast and easy to use the application is, with those piloting the tool saying they can complete the online application, on average, in 20 minutes.

Digitally enabling customers

Empower Retirement announced plans to launch a digital customer-focused wealth management platform that will offer integrated access to investment advice, financial planning and insurance through a single-user experience. The new platform is designed to help underserved mass affluent investors who may not currently work with a professional advisor for their crucial personal financial decisions. Empower will develop the platform in collaboration with Toronto-based Wealthsimple US, Ltd and Dallas-based Apex Clearing Corporation.

Providing advisors with tools to succeed

In Canada, a new goals-based investing tool is making it easier for advisors to recommend solutions personalized to their clients' goals. The new tool includes exclusive access to the new London Life Pathways mutual funds and helps advisors guide clients through the risk-assessment process and set up goals-based portfolios with an appropriate mix of investments. Using the tool, advisors will have access to a dashboard where they'll be able to see their clients' portfolios and determine if they're on track to reach their goals.

Irish Life Group acquires strategic holding in Invesco

Irish Life Group Limited completed the acquisition of a strategic holding in Invesco Ltd. (Ireland), the largest Irish-owned independent financial consultancy in Ireland. Invesco manages 275 occupational pension plans on behalf of large corporations in Ireland, along with pension plans for over 500 small and medium companies. Invesco has almost 55,000 members in corporate pension schemes and approximately €5 billion in assets under administration.

Setting new graduates up for financial success

We announced Indigo as the first national employer to pilot our student debt savings program – the first of its kind in Canada. Through the program, Indigo will match a recently graduated employee's student loan repayments with a contribution to that employee's retirement savings plan. Indigo employs approximately 7,000 people across Canada and ranks highly as one of the top 20 Most Attractive Employer Brands in Canada as chosen by employees and job seekers.

"Helping our employees save for the future while they are paying down their student debt is a natural extension of who we are."

Gil Dennis

Executive Vice-President
Human Resources and Retail
Indigo

Enhancing Putnam's Future with Artificial Intelligence and Machine Learning

Machine learning and artificial intelligence represent significant opportunities that are helping Putnam derive new insights from data as the firm continues its digital transformation. In 2018, Putnam, in partnership with universities and the FinTech community, leveraged deep learning techniques to limit operational error, augment investment analysis, and enable greater workplace efficiency. Putnam's efforts in this area have led to cross-enterprise automation, improved internal productivity and greater ability to address clients' needs.

Putnam ranked #1 in industry for website clarity

In the U.S., Putnam received accolades from VisibleThread, a recognized expert in content analysis, which ranked the firm first out of 69 global asset managers for website clarity. The determination was based on several factors including readability, use of passive language, sentence length and complexity.

STRONGER COMMUNITIES AND SUSTAINABLE PRACTICES

Our companies and employees are connected through a shared purpose to contribute and help build stronger communities. Through employee volunteering, workplace campaigns and corporate donations, we are making a positive impact on the world around us. In addition, our companies' commitment to sustainability motivates us to reduce the impact of our operations through continuous improvement.

Providing critical support for young Canadians

With our support, Kids Help Phone (KHP) – a leader in the mental health space – launched a free, 24-hour crisis texting service for young Canadians in 2018. A six-month pilot project in Manitoba illustrated how in-demand this service is and indicated the need to develop a French platform. We're proud to have been the first corporate donor in Manitoba to sign onto the pilot project and will continue to support KHP as it expands this critical service across Canada, in both English and French.

Making a difference in our communities

Each year, Irish Life Staff Charities selects two charities to receive donations collected throughout the year. In 2018, the charities selected were Irish Motor Neurone Disease Association and Remember Us, with €360,000 raised divided evenly between the two charities. In addition to the charities selected by the employees, Irish Life continues its ongoing support with the Gaelic Athletic Association's (GAA) Healthy Club Project which reaches 150 GAA clubs across Ireland. The Healthy Club Project encourages these clubs to get involved to support communities in the pursuit of better physical, social and mental well-being.

Providing meaningful work experience

In Canada, we helped launch the Ivey Connects Community Internship Program in 2005. This program provides grants for students from the Ivey Business School at Western University to work for community organizations in London and Toronto during the spring and summer. This successful initiative has enabled 57 non-profit internships in London and Toronto to date. In 2019, we'll expand our support to a similar program in the Faculty of Liberal Arts and Professional Studies at York University.

5% reduction

In absolute greenhouse gas emissions
2015 to 2017

Please visit greatwestlifeco.com for more information

7% reduction

In absolute energy consumption
2015 to 2017

Please visit greatwestlifeco.com for more information

$17 million

Contribution to communities in 2018

Score: A-

CDP's 2018 Climate Change Questionnaire

Environmental sustainability

GWL Realty Advisors (GWLRA), our company's real estate management subsidiary, has again been recognized as a leader in sustainability by the Global Real Estate Sustainability Benchmark. As well, one of GWLRA's key funds, the Canadian Real Estate Investment Fund No. 1, landed among the top 5 participants in Canada overall in its first time participating.

Putnam takes a leadership role in sustainable investing

Putnam formed two funds in 2018 with dedicated environmental, social and governance (ESG) strategies. The new funds, Putnam Sustainable Leaders Fund and Putnam Sustainable Future Fund, provide the marketplace with two distinct investment lenses to identify opportunities driven by corporate sustainability practices and solutions. Formed through the repositioning of two existing products, the offerings make Putnam one of the largest ESG managers in the industry, with nearly $5 billion in assets.

Leader in carbon and climate risk management

Great-West Lifeco earned an A- rating on CDP's 2018 Climate Change Questionnaire, which identifies the global leaders in the management of carbon, climate change risks and low carbon opportunities. Great-West Lifeco once again achieved the highest rating among Canadian insurance companies and was among the top seven Canadian companies.

Strengthening sustainable practices

In the U.K., Canada Life Investments has continued to incorporate environmental, social and governance (ESG) factors into investment decisions and to manage its ESG impact in an effective, responsible and sustainable manner. In 2018, Canada Life U.K. published a Real Estate ESG Policy and established an environmental management system aligned to the internationally recognized standard, ISO 14001. The policy is built around four focus areas – asset resilience and performance, health and well-being, skills and opportunities and community engagement.

Empowering our employees to give back

In a first-time partnership with Adam's Camp – a week-long intensive therapy program for children with developmental delays or disabilities – Empower employees had an opportunity to volunteer right in their workplace. Empower sponsored the camp at its Greenwood Village campus with a $10,000 grant and 60 employees volunteered to assist the camp's therapists. It was one of more than 840 unique non-profit organizations supported by more than 1,700 employees through the company's Associates Community Together (ACT) program, which encourages employees to give back to their communities.

Management's Discussion and Analysis

This Management's Discussion and Analysis (MD&A) presents management's view of the financial condition, financial performance and cash flows of Great-West Lifeco Inc. (Lifeco or the Company) for the three and twelve months ended December 31, 2018 and includes a comparison to the corresponding periods in 2017, to the three months ended September 30, 2018, and to the Company's financial condition as at December 31, 2017. This MD&A provides an overall discussion, followed by analysis of the performance of Lifeco's three major reportable segments: Canada, United States (U.S.) and Europe.

Businesses of Lifeco

Lifeco has operations in Canada, the United States and Europe through The Great-West Life Assurance Company (Great-West Life), London Life Insurance Company (London Life), The Canada Life Assurance Company (Canada Life), Great-West Life & Annuity Insurance Company (Great-West Financial), Putnam Investments, LLC (Putnam) and Irish Life Group Limited (Irish Life).

In Canada, Great-West Life and its operating subsidiaries, London Life and Canada Life (owned through holding companies London Insurance Group Inc. (LIG) and Canada Life Financial Corporation (CLFC) respectively), offer a broad portfolio of financial and benefit plan solutions for individuals, families, businesses and organizations through two primary business units: Individual Customer and Group Customer. Through the Individual Customer business unit, the Company provides life, disability and critical illness insurance products as well as wealth savings and income products and services to individual customers. Through the Group Customer business unit, the Company provides life, accidental death and dismemberment, critical illness, disability, health and dental protection, creditor and direct marketing insurance as well as accumulation and annuity products and other specialty products to group customers in Canada. The products are distributed through a multi-channel network of brokers, advisors, managing general agencies and financial institutions including Freedom 55 Financial™ and Wealth and Insurance Solutions Enterprise.

In the U.S., Great-West Financial® is a leading provider of employer-sponsored retirement savings plans in the public/non-profit and corporate sectors. Under the Empower Retirement brand name, Great-West Financial offers employer-sponsored defined contribution plans, individual retirement accounts, enrollment services, communication materials, investment options and education services as well as fund management, investment and advisory services. Its products and services are marketed nationwide through its sales force, brokers, consultants, advisors, third-party administrators and financial institutions. Putnam provides investment management, certain administrative functions and distribution services through a broad range of investment products, including the Putnam Funds, its own family of mutual funds, which are offered to individual and institutional investors.

The Europe segment comprises two distinct business units: Insurance & Annuities, which offers protection and wealth management products, including payout annuity products, through subsidiaries of Canada Life in the United Kingdom (U.K.), the Isle of Man and Germany as well as through Irish Life in Ireland; and Reinsurance, which operates primarily in the U.S., Barbados and Ireland. Reinsurance products are provided through Canada Life, London Life and their subsidiaries.

Lifeco currently has no other material holdings and carries on no business or activities unrelated to its holdings in Great-West Life, London Life, Canada Life, Great-West Financial, Putnam, Irish Life and their subsidiaries. However, Lifeco is not restricted to investing in those companies and may make other investments in the future.

Basis of Presentation and Summary of Accounting Policies

The consolidated financial statements of Lifeco, which are the basis for data presented in this report, have been prepared in accordance with International Financial Reporting Standards (IFRS) unless otherwise noted and are presented in millions of Canadian dollars unless otherwise indicated. This MD&A should be read in conjunction with the Company's consolidated financial statements for the period ended December 31, 2018.

Cautionary Note Regarding Forward-Looking Information

This MD&A may contain forward-looking information. Forward-looking information includes statements that are predictive in nature, depend upon or refer to future events or conditions, or include words such as "expects", "anticipates", "intends", "plans", "believes", "estimates" and other similar expressions or negative versions thereof. These statements include, without limitation, statements about the Company's operations, business, financial condition, expected financial performance (including revenues, earnings or growth rates), ongoing business strategies or prospects, and possible future actions by the Company, including statements made with respect to the expected benefits of acquisitions and divestitures, expected capital management activities and use of capital and expected cost reductions and savings. Forward-looking statements are based on expectations, forecasts, estimates, predictions, projections and conclusions about future events that were current at the time of the statements and are inherently subject to, among other things, risks, uncertainties and assumptions about the Company, economic factors and the financial services industry generally, including the insurance and mutual fund industries. They are not guarantees of future performance, and the reader is cautioned that actual events and results could differ materially from those expressed or implied by forward-looking statements. Material factors and assumptions that were applied in formulating the forward-looking information contained herein include the assumption that the business and economic conditions affecting the Company's operations will continue substantially in their current state, including, without limitation, with respect to customer behaviour, the Company's reputation, market prices for products provided, sales levels, premium income, fee income, expense levels, mortality experience, morbidity experience, policy lapse rates, reinsurance arrangements, liquidity requirements, capital requirements, credit ratings, taxes, inflation, interest and foreign exchange rates, investment values, hedging activities, global equity and capital markets, business competition and other general economic, political and market factors in North America and internationally. Many of these assumptions are based on factors and events that are not within the control of the Company and there is no assurance that they will prove to be correct. Other important factors and assumptions that could cause actual results to differ materially from those contained in forward-looking statements include customer responses to new products, impairments of goodwill and other intangible assets, the Company's ability to execute strategic plans and changes to strategic plans, technological changes, breaches or failure of information systems and security (including cyber attacks), payments required under investment products, changes in local and international laws and regulations, changes in accounting policies and the effect of applying future accounting policy changes, unexpected judicial or regulatory proceedings, catastrophic events, continuity and availability of personnel and third party service providers, the Company's ability to complete strategic transactions and integrate acquisitions and unplanned material changes to the Company's facilities, customer and employee relations or credit arrangements. The reader is cautioned that the foregoing list of assumptions and factors is not exhaustive, and there may be other factors listed in other filings with securities regulators, including factors set out in this MD&A under "Risk Management and Control Practices" and "Summary of Critical Accounting Estimates", which, along with other filings, is available for review at www.sedar.com. The reader is also cautioned to consider these and other factors, uncertainties and potential events carefully and not to place undue reliance on forward-looking information. Other than as specifically required by applicable law, the Company does not intend to update any forward-looking information whether as a result of new information, future events or otherwise.

Cautionary Note Regarding Non-IFRS Financial Measures

This MD&A contains some non-IFRS financial measures. Terms by which non-IFRS financial measures are identified include, but are not limited to, "operating earnings", "adjusted net earnings", "adjusted return on equity", "core net earnings", "constant currency basis", "impact of currency movement", "premiums and deposits", "sales", "assets under management" and "assets under administration". Non-IFRS financial measures are used to provide management and investors with additional measures of performance to help assess results where no comparable IFRS measure exists. However, non-IFRS financial measures do not have standard meanings prescribed by IFRS and are not directly comparable to similar measures used by other companies. Refer to the appropriate reconciliations of these non-IFRS financial measures to measures prescribed by IFRS where applicable.

CONSOLIDATED OPERATING RESULTS

Selected consolidated financial information

(in Canadian $ millions, except for per share amounts)	As at or for the three months ended Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	For the twelve months ended Dec. 31 2018	Dec. 31 2017
Premiums and deposits:					
Amounts reported in the financial statements					
Net premium income (Life insurance, guaranteed annuities and insured health products)	**$ 9,045**	$ 10,337	$ 8,494	**$ 35,461**	$ 33,902
Policyholder deposits (segregated funds):					
Individual products	**4,705**	3,833	5,357	**16,668**	17,037
Group products	**1,641**	1,790	2,009	**7,807**	7,848
Premiums and deposits reported in the financial statements	**15,391**	15,960	15,860	**59,936**	58,787
Self-funded premium equivalents (administrative services only contracts) (1)	**802**	744	720	**3,068**	2,827
Proprietary mutual funds and institutional deposits (1)	**21,390**	17,878	16,065	**76,258**	61,490
Total premiums and deposits (1) (2)	**37,583**	34,582	32,645	**139,262**	123,104
Fee and other income (2)	**1,420**	1,483	1,439	**5,819**	5,608
Net policyholder benefits, dividends and experience refunds	**8,496**	7,653	7,618	**31,566**	30,387
Earnings					
Net earnings – common shareholders	**$ 710**	$ 689	$ 392	**$ 2,961**	$ 2,149
Adjustments (6)	**–**	56	342	**56**	498
Adjusted net earnings – common shareholders (6)	**710**	745	734	**3,017**	2,647
Per common share					
Basic earnings	**0.719**	0.697	0.397	**2.996**	2.173
Adjusted net earnings – common shareholders (6)	**0.719**	0.754	0.742	**3.052**	2.676
Dividends paid	**0.389**	0.389	0.367	**1.556**	1.468
Book value	**22.08**	21.25	20.11		
Return on common shareholders' equity (3)					
Net earnings	**14.0%**	12.8%	10.9%		
Adjusted net earnings (6)	**14.3%**	14.7%	13.4%		
Total assets per financial statements	**$ 427,689**	$ 429,082	$ 419,838		
Proprietary mutual funds and institutional net assets (4)	**281,664**	293,766	278,954		
Total assets under management (4)	**709,353**	722,848	698,792		
Other assets under administration (5)	**689,520**	718,410	651,121		
Total assets under administration	**$ 1,398,873**	$ 1,441,258	$ 1,349,913		
Total equity	**$ 27,398**	$ 26,624	$ 25,536		

(1) In addition to premiums and deposits reported in the financial statements, the Company includes premium equivalents on self-funded group insurance administrative services only (ASO) contracts and deposits on proprietary mutual funds and institutional accounts to calculate total premiums and deposits (a non-IFRS financial measure). This measure provides useful information as it is an indicator of top-line growth.

(2) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

(3) Return on common shareholders' equity is detailed within the "Capital Allocation Methodology" section.

(4) Total assets under management (a non-IFRS financial measure) provides an indicator of the size and volume of the overall business of the Company. Services provided in respect of assets under management include the selection of investments, the provision of investment advice and discretionary portfolio management on behalf of clients. This includes internally and externally managed funds where the Company has oversight of the investment policies.

(5) Other assets under administration (a non-IFRS financial measure) includes assets where the Company only provides administration services for which the Company earns fee and other income. These assets are beneficially owned by clients and the Company does not direct the investing activities. Services provided relating to assets under administration include recordkeeping, safekeeping, collecting investment income, settling of transactions or other administrative services. Administrative services are an important aspect of the overall business of the Company and should be considered when comparing volumes, size and trends.

(6) Adjusted net earnings attributable to common shareholders and adjusted net earnings per common share (EPS) are non-IFRS financial measures of earnings performance. In 2018, adjustments were $56 million of restructuring costs relating to the Company's U.K. operations (refer to note 5 of the Company's December 31, 2018 consolidated financial statements). The following adjustments were made for the twelve months ended December 31, 2017:

2017 Adjustments

	Segment					Annual Financial Statement
	Canada	United States	Europe	Total	EPS Impact	Note Reference
Q1 Restructuring costs	$ –	$ 11	$ 17	$ 28	$ 0.029	N/A
Q2 Restructuring costs	126	–	1	127	0.128	Note 5
Q3 Restructuring costs	–	–	1	1	0.002	N/A
Q4 Restructuring costs	–	–	4	4	0.004	N/A
Q4 Net charge on sale of equity investment	–	122	–	122	0.124	Note 4
Q4 U.S. tax reform impact	19	251	(54)	216	0.218	Note 27
Total Q4 2017 Adjustments	**19**	**373**	**(50)**	**342**	**0.345**	
Total 2017 Adjustments	**$ 145**	**$ 384**	**$ (31)**	**$ 498**	**$ 0.503**	

Lifeco 2018 Highlights

Financial Performance

- The Company maintained its strong capital position as evidenced by a Life Insurance Capital Adequacy Test (LICAT) ratio at December 31, 2018 of 140% for Great-West Life, Lifeco's major Canadian operating subsidiary, which exceeded the Office of the Superintendent of Financial Institutions' (OSFI) Supervisory Target Total Ratio of 100%, and Supervisory Minimum Total Ratio of 90%.
- For the twelve months ended December 31, 2018, net earnings attributable to common shareholders (net earnings) were $2,961 million, compared to $2,149 million for the previous year. In 2018, net earnings were impacted by restructuring costs of $56 million related to the Company's U.K. operations. In 2017, net earnings impacted by restructuring costs of $160 million, a net charge of $216 million from the impact of U.S. tax reform and the net charge on the disposal of an equity investment in Nissay Asset Management Corporation (Nissay), including the non-cash write-off of an associated intangible asset in the U.S. segment of $122 million.
- Excluding these items, adjusted net earnings of $3,017 million were up $370 million or 14% compared to 2017 adjusted net earnings of $2,647 million, reflecting solid performance across the Company's businesses. Lifeco's adjusted net earnings for the twelve months ended December 31, 2018 included a net positive impact of $60 million arising from refinancing activity in the U.S. segment completed in the second quarter of 2018. The third quarter of 2017 included a provision of $175 million related to the impact of 2017 Atlantic hurricane activity.
- In 2018, Lifeco's quarterly common share dividend increased 6% to $0.389 per share.
- Lifeco was active in the capital markets in 2018, with both redemptions and issuances, resulting in net debenture issuances of $415 million, partly in response to the U.S. tax reform introduced at the end of 2017. As a result of these net debenture issuances, financing charges for the twelve months ending December 31, 2018 were $221 million, compared to $300 million for the same period last year.
- The Company's financial leverage ratio at December 31, 2018 was 27.1%, consistent with the prior year, providing financial flexibility to invest in organic growth and acquisition strategies.

Strategic Highlights

- In Canada, through its business transformation program, the Company achieved $209 million of pre-tax annualized expense reductions, exceeding the target of $200 million. Throughout 2018, the Canadian operations continued to focus on responding to customer needs with innovative products and services that are relevant for all stages of life, which drove higher business development and strategic expenses. The Company announced Indigo Books & Music Inc. (Indigo) as the first national employer to pilot the Company's student debt savings program – the first of its kind in Canada. Strategic investments in new digital labs focused on product and process improvements have produced impressive results. During 2018, the Company launched Simple Protect, a new web-based application for simple term life policies, with great success, resulting in the streamlined issuance of qualifying term policies.
- Within the U.S. operations, the Company continues to focus on the defined contribution retirement and asset management markets. As a result, on January 24, 2019, the Company announced it was selling substantially all of its individual life insurance and annuity business, via a reinsurance agreement, to Protective Life Insurance Company (Protective Life). The Company estimates that this will result in an after-tax transaction value of approximately $1.6 billion (US$1.2 billion), excluding one-time expenses, but including the ceding commission and a capital release is expected to occur of approximately $530 million (US$400 million). This business contributed $138 million (US$108 million) to the Company's net earnings for twelve months ended December 31, 2018. The transaction is expected to close in the first half of 2019 and the Company expects to recognize a loss related to this transaction.

  Empower Retirement has maintained the second position in the U.S. defined contribution recordkeeping market, measured by number of participants. Empower Retirement participant accounts have grown 6% to 8.8 million at December 31, 2018 from 8.3 million at December 31, 2017 and sales grew 29% compared to 2017. In the year, Empower Retirement introduced a new web-based platform called "My Total Retirement" for its users, which provides a fully integrated advisory solution to retirement. Putnam received DALBAR's Total Client Experience award recognizing overall mutual fund client service and continued its strong fund investment performance relative to its peers with 87% of fund assets performing at levels above the Lipper median on a three-year basis ended December 31, 2018.

- In Europe, the Company was active in merger and acquisition activities. On January 2, 2018, the Company, through its wholly-owned subsidiary, The Canada Life Group (U.K.) Limited, completed the acquisition of U.K. financial services provider Retirement Advantage. This acquisition allowed the Company to increase scale in an existing business, expanding the Company's business model to include equity release mortgage products and enhance systems. The Company also announced the sale of a heritage block of policies to Scottish Friendly, which is expected to close in the second half of 2019. As a result of these activities, in the third quarter of 2018, the Company commenced certain restructuring initiatives in its U.K. operations relating to the integration of Retirement Advantage, as well as the pending sale of a heritage block of policies to Scottish Friendly. The acquisition of Retirement Advantage and sale of policies to Scottish Friendly allows the Company to focus on growth opportunities in the U.K., including the development of a full range of products in the U.K. retirement income market.

  The Company maintained its market-leading presence in Ireland through Irish Life in 2018. Irish Life launched "Benefit Plan", which rewards customers who are making strides to stay healthy and "Digital Agent", a "Skype for Business" based technology for employees of major corporate clients. In the third quarter of 2018, the Company, acquired a controlling interest in Invesco Ltd. (Ireland) (Invesco), an independent financial consultancy firm. As a manager of corporate pension plans, Invesco is a natural addition to Irish Life's group pension business.

Outlook for 2019

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

- Lifeco is continuing to focus on meeting the diverse and changing needs of its customers and advisors while facing rapid pace of change and challenging economic conditions. The Company will invest strategically – both organically and through acquisitions – to drive growth and productivity, while maintaining strong risk and expense discipline, to deliver long-term value to its customers and shareholders. The Company will continue to review its businesses and products as well as assess market opportunities for capital deployment to both strengthen and extend existing businesses and to capture new and emerging growth opportunities. In 2019, the Company will remain focused on future regulatory changes, including preparing for the implementation of accounting changes related to IFRS 17, *Insurance Contracts,* which is effective on or after January 1, 2022 and impacts the recognition, measurement, presentation and disclosures of insurance contracts. In order to comply with the requirements of the new standard, the Company will be investing in updating the associated complex processes and systems throughout the implementation period.
- In Canada, through its business transformation program, the Company achieved $209 million of pre-tax annualized expense reductions, exceeding the target of $200 million. The Company will continue to invest in innovative technologies, focus on strategies to enhance growth and its competitive position and identify ways to further simplify its products, marketing, operations and structure.
- In the U.S., following the disposition of substantially all of its individual life insurance and annuity business expected in the first half of 2019, Great-West Financial will focus on the defined contribution retirement market and its Empower Retirement brand. Empower Retirement is expected to grow, gain efficiencies and enhance the overall customer experience through continued focus on investment in innovation. At Putnam, the focus will continue to be on driving growth and market share through strong investment performance and service excellence.
- In Europe, the Company will take any steps necessary to handle the impacts of Brexit, which includes ongoing market uncertainty. Contingency plans are in place, but the impacts on the business are expected to be small as the Company's businesses are principally domestic to the countries where they are based. The Company intends to invest in additional system functionality and digital capacities and will expand the range of products offered in the U.K. In Ireland, deepening and broadening the market leading retail, corporate and investment management businesses, while managing costs, will continue to be the focus. In Germany, investments will continue to implement technology to drive a better customer offering and processing efficiencies as well as lay the foundation for enhanced future growth capabilities. Reinsurance will build on its diversified multi-niche base to grow and continue to meet client needs.

Net Earnings

Consolidated net earnings of Lifeco include the net earnings of Great-West Life and its operating subsidiaries, London Life, Canada Life and Irish Life; Great-West Financial and Putnam; together with Lifeco's Corporate operating results.

Lifeco's net earnings for the three month period ended December 31, 2018 were $710 million compared to $392 million a year ago and $689 million in the previous quarter. On a per share basis, this represents $0.719 per common share ($0.719 diluted) for the fourth quarter of 2018 compared to $0.397 per common share ($0.396 diluted) a year ago and $0.697 per common share ($0.697 diluted) in the previous quarter. Excluding the impact of U.S. tax reform, the net charge on the sale of an equity investment and restructuring costs, which totaled $342 million, adjusted net earnings for the fourth quarter of 2017 were $734 million or $0.742 per common share.

For the twelve months ended December 31, 2018, Lifeco's net earnings were $2,961 million compared to $2,149 million a year ago. On a per share basis, this represents $2.996 per common share ($2.994 diluted) for 2018 compared to $2.173 per common share ($2.170 diluted) a year ago. Included in Lifeco's net earnings for the twelve months ended December 31, 2018 were restructuring costs of $56 million related to the Company's U.K. operations. Net earnings in 2017 included adjustments of $498 million related to the impact of U.S. tax reform, the net charge on the sale of an equity investment and restructuring costs. Excluding the impact of these items, adjusted net earnings for the twelve months ended December 31, 2018 were $3,017 million or $3.052 per common share ($3.051 diluted), compared to $2,647 million or $2.676 per common share ($2.672 diluted) a year ago. Lifeco's net earnings for the twelve months ended December 31, 2018 included a net positive impact of $60 million, which increased earnings per common share by $0.061, arising from refinancing in the U.S. segment completed in the second quarter of 2018. Lifeco's net earnings for the twelve months ended December 31, 2017 included a provision of $175 million related to the impact of 2017 Atlantic hurricane activity, which reduced earnings per common share by $0.177.

Net earnings – common shareholders

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018** [(2)]	Dec. 31 2017 [(3)]
Canada					
Individual Customer	**$ 171**	$ 165	$ 162	**$ 685**	$ 589
Group Customer	**144**	150	193	**630**	641
Canada Corporate [(1)]	**(5)**	–	(17)	**(40)**	(156)
	310	315	338	**1,275**	1,074
United States					
Financial Services	**84**	121	80	**397**	357
Asset Management	**(29)**	(8)	(5)	**(61)**	(21)
U.S. Corporate [(1) (2)]	**–**	–	(373)	**52**	(386)
	55	113	(298)	**388**	(50)
Europe					
Insurance & Annuities	**271**	240	250	**1,036**	947
Reinsurance [(3)]	**89**	87	67	**377**	190
Europe Corporate [(1)]	**(11)**	(64)	41	**(102)**	15
	349	263	358	**1,311**	1,152
Lifeco Corporate	**(4)**	(2)	(6)	**(13)**	(27)
Net earnings – common shareholders	**$ 710**	$ 689	$ 392	**$ 2,961**	$ 2,149
Adjustments [(1)]					
Restructuring costs	**–**	56	4	**56**	160
Net charge on sale of equity investment	**–**	–	122	**–**	122
U.S. tax reform impact	**–**	–	216	**–**	216
Adjusted net earnings – common shareholders	**$ 710**	$ 745	$ 734	**$ 3,017**	$ 2,647

(1) Adjustments to net earnings are included in the Corporate business units of the Canada, Europe and U.S. segments.

(2) U.S. Corporate net earnings for the second quarter of 2018 included a net positive impact of $60 million arising from refinancing in the U.S. segment.

(3) Reinsurance net earnings for the third quarter of 2017 included a provision of $175 million related to the impact of 2017 Atlantic hurricane activity.

The information in the table above is a summary of results for net earnings of the Company. Additional commentary regarding net earnings is included in the "Segmented Operating Results" section.

Market Impacts

Interest Rate Environment

Interest rates in countries where the Company operates mostly increased during 2018. The net change in interest rates did not impact the range of interest rate scenarios tested through the valuation process and had no material impact on net earnings. The net change in interest rates for the quarter and year-to-date did not have a material impact on Great-West Life's LICAT ratio.

In order to mitigate the Company's exposure to interest rate fluctuations, the Company follows disciplined processes for matching asset and liability cash flows. As a result, the impact of changes in fair values of bonds backing insurance contract liabilities recorded through profit or loss is mostly offset by a corresponding change in the insurance contract liabilities.

The Company's sensitivity to interest rate fluctuations is detailed in the "Accounting Policies – Summary of Critical Accounting Estimates" section.

Equity Markets

In the regions where the Company operates, average equity market levels in the fourth quarter of 2018 were mostly down compared to the same period in 2017 and ended the quarter at lower market levels compared to September 30, 2018. For the twelve months ended December 31, 2018, average equity market levels were mostly up compared to the same period in 2017.

Relative to the Company's expectation, the change in average market levels and market volatility had a negative impact of $50 million on net earnings during the fourth quarter of 2018 and $47 million year-to-date in 2018 ($4 million positive impact in the fourth quarter of 2017 and $13 million positive impact year-to-date in 2017), related to asset-based fee income and the costs related to guarantees of death, maturity or income benefits within certain wealth management products offered by the Company. In addition, the impact on net earnings was negative $14 million in the fourth quarter of 2018 and $4 million year-to-date in 2018 ($7 million positive impact in the fourth quarter of 2017 and $26 million positive impact year-to-date in 2017), primarily related to seed money investments held in the Asset Management and Canada Corporate business units. In addition, the decline in equity markets negatively impacted the fourth quarter 2018 net earnings by $8 million ($7 million year-to-date) as a result of the combination of actuarial assumption changes in the Canada segment and annuity reserve strengthening in the U.S. segment partly offset by a favourable tax related item in the Europe segment.

Comparing the fourth quarter of 2018 to the fourth quarter of 2017, average equity market levels were down by 6% in Canada (as measured by S&P TSX), 7% in the U.K. (as measured by FTSE 100), 12% in broader Europe (as measured by Eurostoxx 50) and up by 3% in the U.S. (as measured by S&P 500). The major equity indices finished the fourth quarter down 11% in Canada, 14% in the U.S., 10% in the U.K. and 12% in broader Europe, compared to September 30, 2018.

Foreign Currency

Throughout this document, a number of terms are used to highlight the impact of foreign exchange on results, such as: "constant currency basis", "impact of currency movement" and "effect of currency translation fluctuations". These measures have been calculated using the average or period end rates, as appropriate, in effect at the date of the comparative period. This non-IFRS measure provides useful information as it facilitates the comparability of results between periods.

The average currency translation rate for the fourth quarter of 2018 increased for the U.S. dollar, British pound and the euro compared to the fourth quarter of 2017. The overall impact of currency movement on the Company's net earnings for the three month period ended December 31, 2018 was an increase of $7 million ($45 million year-to-date) compared to translation rates a year ago.

From September 30, 2018 to December 31, 2018, the market rate at the end of the reporting period used to translate U.S. dollar, British pound and euro assets and liabilities to the Canadian dollar increased. The movements in end-of-period market rates resulted in unrealized foreign exchange gains from the translation of foreign operations, including related hedging activities, of $632 million in-quarter ($723 million net unrealized gains year-to-date) recorded in other comprehensive income.

Translation rates for the reporting period and comparative periods are detailed in the "Translation of Foreign Currency" section.

Credit Markets

Credit markets impact on common shareholders' net earnings (after-tax)

	Impairment (charges) / recoveries	Changes in provisions for future credit losses in insurance contract liabilities	Total	Impairment (charges) / recoveries	Changes in provisions for future credit losses in insurance contract liabilities	Total
	For the three months ended December 31, 2018			For the twelve months ended December 31, 2018		
Canada	$ –	$ (1)	$ (1)	$ –	$ (4)	$ (4)
United States	(2)	(2)	(4)	1	(4)	(3)
Europe	–	(12)	(12)	2	(32)	(30)
Total	**$ (2)**	**$ (15)**	**$ (17)**	**$ 3**	**$ (40)**	**$ (37)**
	For the three months ended December 31, 2017			For the twelve months ended December 31, 2017		
Total	$ (1)	$ 7	$ 6	$ (3)	$ 7	$ 4

In the fourth quarter of 2018, the Company experienced net charges on impaired investments, including dispositions, which negatively impacted common shareholders' net earnings by $2 million ($1 million net charge in the fourth quarter of 2017). Changes in credit ratings in the Company's fixed income portfolio resulted in a net increase in provisions for future credit losses in insurance contract liabilities, which negatively impacted common shareholders' net earnings by $15 million for the quarter ($7 million net positive impact in the fourth quarter of 2017), primarily due to downgrades of various corporate bond holdings.

For the twelve months ended December 31, 2018, the Company experienced net recoveries on impaired investments, including dispositions, which positively impacted common shareholders' net earnings by $3 million ($3 million net charge in 2017). Changes in credit ratings in the Company's fixed income portfolio resulted in a net increase in provisions for future credit losses in insurance contract liabilities, which negatively impacted common shareholders' net earnings by $40 million year-to-date ($7 million net positive impact in 2017) and included $16 million related to downgrades to mortgages on certain U.K. retail properties in the third quarter of 2018.

Actuarial Assumption Changes

During the fourth quarter of 2018, the Company updated a number of actuarial assumptions resulting in a positive net earnings impact of $83 million, compared to $35 million for the same quarter last year and $203 million for the previous quarter. In Europe, net earnings were positively impacted by $46 million, primarily due to modeling refinements and updated annuitant mortality and economic assumptions, partially offset by updated life mortality assumptions. In Canada, net earnings were positively impacted by $33 million, primarily due to updated policyholder behaviour and economic assumptions. In the U.S., net earnings were positively impacted by $4 million, primarily due to updated policyholder behaviour assumptions, partially offset by updated economic assumptions.

For the twelve months ended December 31, 2018, actuarial assumption changes resulted in a positive net earnings impact of $616 million, compared to $243 million for the same period in 2017. Net earnings in 2018 were positively impacted by continuing updates to annuitant mortality assumptions. Net earnings in 2017 included the negative impact of updated tax assumptions due to U.S. tax reform and updated policyholder behaviour assumptions.

Premiums and Deposits and Sales

Total premiums and deposits (a non-IFRS financial measure) include premiums on risk-based insurance and annuity products net of ceded reinsurance (as defined under IFRS), premium equivalents on self-funded group insurance ASO contracts, deposits on individual and group segregated fund products as well as deposits on proprietary mutual funds and institutional accounts. This measure provides an indicator of top-line growth.

Sales (a non-IFRS financial measure) for risk-based insurance and annuity products include 100% of single premium and annualized premiums expected in the first twelve months of the plan. Group insurance and ASO sales reflect annualized premiums and premium equivalents for new policies and new benefits covered or expansion of coverage on existing policies. For individual wealth management products, sales include deposits on segregated fund products, proprietary mutual funds and institutional accounts as well as deposits on non-proprietary mutual funds. For group wealth management products, sales include assets transferred from previous plan providers and the expected annual contributions from the new plan. This measure provides an indicator of new business growth.

Premiums and deposits

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (1)	**Dec. 31 2018**	Dec. 31 2017 (1)
Canada					
Individual Customer	**$ 2,862**	$ 2,419	$ 2,809	**$ 10,461**	$ 10,880
Group Customer (1)	**3,776**	3,850	4,026	**15,837**	15,620
	6,638	6,269	6,835	**26,298**	26,500
United States					
Financial Services	**3,105**	3,230	3,134	**12,627**	12,950
Asset Management	**17,483**	14,128	11,016	**59,848**	45,499
	20,588	17,358	14,150	**72,475**	58,449
Europe					
Insurance & Annuities	**6,485**	7,848	8,665	**26,985**	25,426
Reinsurance	**3,872**	3,107	2,995	**13,504**	12,729
	10,357	10,955	11,660	**40,489**	38,155
Total premiums and deposits (1)	**$ 37,583**	$ 34,582	$ 32,645	**$ 139,262**	$ 123,104

Sales

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Canada	**$ 3,447**	$ 2,877	$ 3,772	**$ 13,186**	$ 13,608
United States	**32,080**	24,284	19,162	**105,948**	81,621
Europe – Insurance & Annuities	**5,972**	7,235	7,325	**24,481**	21,938
Total sales	**$ 41,499**	$ 34,396	$ 30,259	**$ 143,615**	$ 117,167

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

The information in the table above is a summary of results for the Company's total premiums and deposits and sales. Additional commentary regarding premiums and deposits and sales is included in the "Segmented Operating Results" section.

Net Investment Income

Net investment income

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Investment income earned (net of investment properties expenses)	**$ 1,653**	$ 1,598	$ 1,537	**$ 6,377**	$ 6,143
Allowances for credit losses on loans and receivables	**–**	(4)	(6)	**(4)**	(7)
Net realized gains	**13**	15	66	**113**	127
Regular investment income	**1,666**	1,609	1,597	**6,486**	6,263
Investment expenses	**(34)**	(31)	(33)	**(128)**	(122)
Regular net investment income	**1,632**	1,578	1,564	**6,358**	6,141
Changes in fair value through profit or loss	**(398)**	(1,371)	1,415	**(3,606)**	1,466
Net investment income	**$ 1,234**	$ 207	$ 2,979	**$ 2,752**	$ 7,607

Net investment income in the fourth quarter of 2018, which includes changes in fair value through profit or loss, decreased by $1,745 million compared to the same quarter last year. The changes in fair value in the fourth quarter of 2018 were a decrease of $398 million compared to an increase of $1,415 million for the fourth quarter of 2017. In the fourth quarter of 2018, the net decrease to fair values was primarily due to a decline in Canadian equity markets, partially offset by a decline in bond yields across all geographies. In the fourth quarter of 2017, the net increase to fair values was primarily due to a decline in long duration Canadian bond yields as well as a decline in U.K. bond yields.

Regular net investment income in the fourth quarter of 2018, which excludes changes in fair value through profit or loss, increased by $68 million compared to the fourth quarter of 2017. The increase was primarily due to an overall growth in portfolio investments as well as the impact of currency movement as the U.S. dollar, British pound and euro strengthened against the Canadian dollar, partially offset by lower net realized gains primarily driven by fewer early mortgage redemptions compared to the same quarter last year. Net realized gains include gains on available-for-sale securities of $1 million for the fourth quarter of 2018 compared to $13 million for the same quarter last year.

For the twelve months ended December 31, 2018, net investment income decreased by $4,855 million compared to the same period last year. The changes in fair value for the twelve month period in 2018 were a decrease of $3,606 million compared to an increase of $1,466 million during the same period in 2017. The changes in fair value were primarily due to an increase in bond yields across all geographies as well as a decline in Canadian equity markets in 2018, compared to mixed bond yield movement and an increase in Canadian equity markets during 2017.

Regular net investment income for the twelve months ended December 31, 2018 increased by $217 million compared to the same period last year. The increase was primarily due to an overall growth in portfolio investments as well as the impact of currency movement as the British pound and euro strengthened against the Canadian dollar. Net realized gains include losses on available-for-sale securities of $4 million for the twelve months ended December 31, 2018, compared to gains of $30 million for the same period last year. Net realized gains also include realized gains arising from refinancing in the U.S. segment completed in the second quarter of 2018.

Net investment income in the fourth quarter of 2018 increased by $1,027 million compared to the previous quarter, primarily due to net decreases in fair values of $398 million in the fourth quarter of 2018 compared to $1,371 million in the previous quarter. The net change in fair value was primarily due to a decline in Canadian equity markets partially offset by a decline in bond yields across all geographies during the fourth quarter of 2018, compared to an increase in bond yields in the third quarter of 2018.

Fee and Other Income

In addition to providing traditional risk-based insurance products, the Company also provides certain products on a fee-for-service basis. The most significant of these products are segregated funds and mutual funds, for which the Company earns investment management fees on assets managed and other fees, as well as ASO contracts, under which the Company provides group benefit plan administration on a cost-plus basis.

Effective January 1, 2018 the Company adopted IFRS 15, *Revenue from Contracts with Customers*, which resulted in reclassifications to certain revenues and expenses. Comparative figures for fee and other income have been reclassified to reflect the revised presentation as described in the "International Financial Reporting Standard" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

Fee and other income

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (1)	**Dec. 31 2018**	Dec. 31 2017 (1)
Canada					
Segregated funds, mutual funds and other (1)	**$ 378**	$ 389	$ 387	**$ 1,540**	$ 1,493
ASO contracts (1)	**50**	48	49	**196**	191
	428	437	436	**1,736**	1,684
United States					
Segregated funds, mutual funds and other (1)	**644**	673	635	**2,603**	2,538
Europe					
Segregated funds, mutual funds and other	**348**	373	368	**1,480**	1,386
Total fee and other income (1)	**$ 1,420**	$ 1,483	$ 1,439	**$ 5,819**	$ 5,608

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

The information in the table above is a summary of gross fee and other income for the Company. Additional commentary regarding fee and other income is included in the "Segmented Operating Results" section.

Net Policyholder Benefits, Dividends and Experience Refunds

Net policyholder benefits, dividends and experience refunds

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Canada	**$ 2,272**	$ 2,305	$ 2,319	**$ 9,324**	$ 9,373
United States	**1,172**	1,266	1,156	**4,592**	4,228
Europe	**5,052**	4,082	4,143	**17,650**	16,786
Total	**$ 8,496**	$ 7,653	$ 7,618	**$31,566**	$ 30,387

Net policyholder benefits, dividends and experience refunds include life and health claims, policy surrenders, maturities, annuity payments, segregated fund guarantee payments, policyholder dividends and experience refund payments. The amounts do not include benefit payments for ASO contracts, segregated funds or mutual funds.

For the three months ended December 31, 2018, net policyholder benefits, dividends and experience refunds were $8.5 billion, an increase of $0.9 billion from the same period in 2017 driven by higher net policyholder benefits. The increase in benefit payments was primarily due to new and restructured reinsurance agreements, higher volumes relating to existing business and the impact of currency movement.

For the twelve months ended December 31, 2018, net policyholder benefits, dividends and experience refunds were $31.6 billion, an increase of $1.2 billion from the same period in 2017 driven by higher net policyholder benefits. The increase in benefit payments was primarily due to new and restructured reinsurance agreements, higher volumes relating to existing business and the impact of currency movement in Europe, as well as higher surrender benefits in Empower Retirement and Individual Markets in the U.S. segment.

Compared to the previous quarter, net policyholder benefits, dividends and experience refunds increased by $0.8 billion, primarily due to the same reasons discussed for the in-quarter results.

Other Benefits and Expenses

Other benefits and expenses

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (1)	**Dec. 31 2018**	Dec. 31 2017 (1)
Operating and administrative expenses (1)	**$ 1,311**	$ 1,244	$ 1,237	**$ 5,033**	$ 4,705
Commissions (1)	**673**	611	646	**2,474**	2,647
Premium taxes	**128**	122	115	**495**	463
Financing charges	**70**	69	74	**221**	300
Amortization of finite life intangible assets and impairment reversal	**59**	54	29	**212**	168
Restructuring expenses	**–**	67	5	**67**	259
Total	**$ 2,241**	$ 2,167	$ 2,106	**$ 8,502**	$ 8,542

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

Other benefits and expenses for the fourth quarter of 2018 of $2,241 million increased by $135 million compared to the fourth quarter of 2017, primarily due to higher operating and administrative expenses, driven by increased strategic and business development expenses due to investment in technology and innovation to enhance the customer experience across all regions.

For the twelve months ended December 31, 2018, other benefits and expenses decreased by $40 million to $8,502 million compared to the same period last year, primarily due to lower restructuring expenses in Canada and lower commissions driven by a combination of lower sales and sales mix in Canada. The decrease was partially offset by higher operating and administrative expenses, driven by higher strategic and business development expenses discussed for the in-quarter results.

Other benefits and expenses for the fourth quarter of 2018 increased by $74 million compared to the previous quarter, primarily due to higher operating and administrative expenses related to Canada, driven by higher strategic and business development expenses, as well as higher commissions, driven by higher sales in Canada. Included in the third quarter of 2018 results were restructuring expenses of $67 million pre-tax ($56 million after-tax) related to the Company's U.K. operations.

Income Taxes

The Company's effective income tax rate is generally lower than the statutory income tax rate of 27% due to benefits related to non-taxable investment income and lower income tax in foreign jurisdictions.

In the fourth quarter of 2018, the Company had an effective income tax rate of 6%, down from 30% in the fourth quarter of 2017. On December 22, 2017, the *Tax Reconciliation Act*, was substantively enacted, following the signing by the President of the U.S. The legislation, which was generally effective for tax years beginning on January 1, 2018, results in significant U.S. tax reform and revises the Internal Revenue Code by, among other things, lowering the corporate federal income tax rate from 35% to 21% and modifying how the U.S. taxes multinational entities. As a result of these changes, the Company revalued certain deferred tax balances and insurance contract liabilities and updated certain expense provisions. The impact of these items was a net charge of $216 million to net earnings, which increased the Company's fourth quarter of 2017 effective income tax rate by 21 points. Excluding the impact of U.S. tax reform, the Company had an effective income tax rate of 9% for the fourth quarter of 2017. The fourth quarter effective tax rate of 6% in 2018 was favourably impacted by changes in certain tax estimates.

The Company had an effective income tax rate of 11% for the twelve months ended December 31, 2018 compared to 15% for the same period last year. Excluding the impact of U.S. tax reform discussed for the in-quarter results, the Company's effective tax rate was 11% for the twelve months ended December 31, 2017 and was comparable to the same period in 2018.

In the fourth quarter of 2018, the Company had an effective income tax rate of 6%, down from 13% in the third quarter of 2018 primarily due to the favourable impact of changes in certain tax estimates.

Refer to note 27 in the Company's December 31, 2018 annual consolidated financial statements for further details.

Consolidated Financial Position

Assets

Assets under administration

	December 31, 2018			
	Canada	United States	Europe	Total
Assets				
Invested assets	$ 75,647	$ 47,500	$ 54,334	$ 177,481
Assets held for sale	–	–	897	897
Goodwill and intangible assets	5,516	2,130	2,878	10,524
Other assets	3,110	4,495	18,336	25,941
Investments on account of segregated fund policyholders	76,633	31,816	101,078	209,527
Investments on account of segregated fund policyholders held for sale	–	–	3,319	3,319
Total assets	160,906	85,941	180,842	427,689
Proprietary mutual funds and institutional net assets	6,214	235,075	40,375	281,664
Total assets under management	167,120	321,016	221,217	709,353
Other assets under administration	13,615	630,881	45,024	689,520
Total assets under administration	$ 180,735	$ 951,897	$ 266,241	$ 1,398,873

	December 31, 2017			
	Canada	United States	Europe	Total
Assets				
Invested assets	$ 73,110	$ 44,263	$ 50,562	$ 167,935
Assets held for sale	–	169	–	169
Goodwill and intangible assets	5,447	1,975	2,489	9,911
Other assets	2,804	3,618	18,044	24,466
Investments on account of segregated fund policyholders	80,399	34,038	102,920	217,357
Total assets	161,760	84,063	174,015	419,838
Proprietary mutual funds and institutional net assets	6,810	232,623	39,521	278,954
Total assets under management	168,570	316,686	213,536	698,792
Other assets under administration	11,580	597,596	41,945	651,121
Total assets under administration	$ 180,150	$ 914,282	$ 255,481	$ 1,349,913

Total assets under administration at December 31, 2018 increased by $49.0 billion to $1.4 trillion compared to December 31, 2017, primarily due to the impact of currency movement and new business growth, partially offset by the impact of market movement. The increase of $2.0 billion in the Canada segment's other assets under administration was primarily due to the acquisition of EverWest Real Estate Partners (EverWest), a U.S. based real estate advisor, partially offset by the transition of real estate assets from GWL Realty Advisors to British Columbia Investment Management Corporation (bcIMC) in the first quarter of 2018. The increase of $3.1 billion in the Europe segment's other assets under administration was primarily due to the acquisition of Invesco in the third quarter of 2018, which included $4.3 billion of other assets under administration.

Assets held for sale of $897 million and investments on account of segregated fund policyholders held for sale of $3,319 million at December 31, 2018 relate to the pending sale of a heritage block of policies to Scottish Friendly which is expected to close in the second half of 2019. Refer to note 4 of the Company's December 31, 2018 consolidated financial statements for further information on assets classified as held for sale.

Invested Assets

The Company manages its general fund assets to support the cash flow, liquidity and profitability requirements of the Company's insurance and investment products. The Company follows prudent and conservative investment policies, so that assets are not unduly exposed to concentration, credit or market risks. Within the framework of the Company's policies, the Company implements strategies and reviews and adjusts them on an ongoing basis in light of liability cash flows and capital market conditions. The majority of investments of the general fund are in medium-term and long-term fixed-income investments, primarily bonds and mortgages, reflecting the characteristics of the Company's liabilities.

Invested asset distribution

	December 31, 2018				
	Canada	United States	Europe	Total	
Bonds					
Government & related	$ 21,091	$ 5,291	$ 22,405	$ 48,787	28%
Corporate & other	26,174	28,266	21,635	76,075	43
Sub-total bonds	47,265	33,557	44,040	124,862	71
Mortgages	14,039	6,440	4,535	25,014	14
Stocks	8,724	187	379	9,290	5
Investment properties	2,330	7	2,881	5,218	3
Sub-total portfolio investments	72,358	40,191	51,835	164,384	93
Cash and cash equivalents	455	1,330	2,383	4,168	2
Loans to policyholders	2,834	5,979	116	8,929	5
Total invested assets	$ 75,647	$ 47,500	$ 54,334	$ 177,481	100%

	December 31, 2017				
	Canada	United States	Europe	Total	
Bonds					
Government & related	$ 22,600	$ 5,848	$ 21,449	$ 49,897	30%
Corporate & other	23,704	26,342	20,261	70,307	42
Sub-total bonds	46,304	32,190	41,710	120,204	72
Mortgages	13,142	5,447	3,596	22,185	13
Stocks	8,324	112	428	8,864	5
Investment properties	1,960	5	2,886	4,851	3
Sub-total portfolio investments	69,730	37,754	48,620	156,104	93
Cash and cash equivalents	701	1,017	1,833	3,551	2
Loans to policyholders	2,679	5,492	109	8,280	5
Total invested assets	$ 73,110	$ 44,263	$ 50,562	$ 167,935	100%

At December 31, 2018, total invested assets were $177.5 billion, an increase of $9.5 billion from December 31, 2017. The increase in invested assets was primarily due to regular business activity as well as the impact of currency movement. The distribution of assets has not changed significantly and remains heavily weighted to bonds and mortgages.

Bond portfolio – It is the Company's policy to acquire primarily investment grade bonds subject to prudent and well-defined investment policies. Modest investments in below investment grade rated securities may occur while not changing the overall discipline and conservative approach to the investment strategy. The total bond portfolio, including short-term investments, was $124.9 billion or 71% of invested assets at December 31, 2018 and $120.2 billion or 72% at December 31, 2017. The overall quality of the bond portfolio remained high, with 99% of the portfolio rated investment grade and 79% rated A or higher.

Bond portfolio quality

	December 31, 2018		December 31, 2017	
AAA	$ 23,558	19%	$ 24,889	21%
AA	33,793	27	32,405	27
A	41,008	33	40,328	33
BBB	25,553	20	21,449	18
BB or lower	950	1	1,133	1
Total	$ 124,862	100%	$ 120,204	100%

At December 31, 2018, non-investment grade bonds were $1.0 billion or 0.8% of the bond portfolio compared to $1.1 billion or 0.9% of the bond portfolio at December 31, 2017.

Mortgage portfolio – It is the Company's practice to acquire high quality commercial mortgages meeting strict underwriting standards and diversification criteria. The Company has a well-defined risk-rating system, which it uses in its underwriting and credit monitoring processes for commercial loans. Residential loans are originated by the Company's mortgage specialists in accordance with well-established underwriting standards and are well diversified across each geographic region, including specific diversification requirements for non-insured mortgages. With the acquisition of Retirement Advantage in the Europe segment, the Company acquired a portfolio of equity release mortgages, which are loans provided to seniors who want to continue living in their homes while accessing some of the underlying equity value in their homes. Loans are typically repaid when the borrower dies or moves into long-term care. The Company will continue to originate equity release mortgages through Retirement Advantage.

Mortgage portfolio

	December 31, 2018				December 31, 2017	
Mortgage loans by type	Insured	Non-insured	Total		Total	
Single family residential	$ 610	$ 1,494	$ 2,104	8%	$ 2,139	10%
Multi-family residential	3,920	3,697	7,617	31	6,766	30
Equity release	–	813	813	3	–	–
Commercial	302	14,178	14,480	58	13,280	60
Total	$ 4,832	$ 20,182	$ 25,014	100%	$ 22,185	100%

The total mortgage portfolio was $25.0 billion or 14% of invested assets at December 31, 2018, compared to $22.2 billion or 13% of invested assets at December 31, 2017. Total insured loans were $4.8 billion or 19% of the mortgage portfolio. The increase in the total mortgage portfolio was primarily due to the equity release mortgages acquired in the Retirement Advantage acquisition, net commercial mortgage originations and the impact of currency movement as the U.S. dollar strengthened against the Canadian dollar. The equity release mortgages had a weighted average loan-to-value of 23%.

Commercial mortgages

	December 31, 2018				December 31, 2017			
	Canada	U.S.	Europe	Total	Canada	U.S.	Europe	Total
Retail & shopping centres	$ 3,616	$ 656	$ 1,341	$ 5,613	$ 3,185	$ 628	$ 1,337	$ 5,150
Office buildings	1,795	1,043	614	3,452	1,862	888	658	3,408
Industrial	1,418	1,859	800	4,077	1,411	1,322	855	3,588
Other	394	448	496	1,338	382	419	333	1,134
Total	$ 7,223	$ 4,006	$ 3,251	$ 14,480	$ 6,840	$ 3,257	$ 3,183	$ 13,280

Single family residential mortgages

	December 31, 2018		December 31, 2017	
Region				
Ontario	$ 1,055	51%	$ 1,054	49%
Quebec	445	21	458	22
Alberta	126	6	135	6
British Columbia	112	5	120	6
Newfoundland	108	5	112	5
Saskatchewan	90	4	94	5
Nova Scotia	62	3	63	3
New Brunswick	54	3	50	2
Manitoba	47	2	49	2
Other	5	–	4	–
Total	$ 2,104	100%	$ 2,139	100%

During the twelve months ended December 31, 2018, single family mortgage originations, including renewals, were $577 million, of which 25% were insured. Insured mortgages include mortgages where insurance is provided by a third party and protects the Company in the event that the borrower is unable to fulfill their mortgage obligations. Loans that are insured are subject to the requirements of the mortgage default insurance provider. For new originations of non-insured residential mortgages, the Company's investment policies limit the amortization period to a maximum of 25 years and the loan-to-value to a maximum of 80% of the purchase price or current appraised value of the property. The weighted average remaining amortization period for the single family residential mortgage portfolio was 21 years as at December 31, 2018 (21 years at December 31, 2017).

Equity portfolio – The total equity portfolio was $14.5 billion or 8% of invested assets at December 31, 2018 compared to $13.7 billion or 8% of invested assets at December 31, 2017. The equity portfolio consists of publicly traded stocks, privately held stocks and investment properties. The increase in public stocks of $0.4 billion was primarily due to purchases in the Canadian division partially offset by a decline in Canadian equity markets. The increase in investment properties of $0.4 billion was mainly the result of purchases in the Canadian division.

Equity portfolio

	December 31, 2018		December 31, 2017	
Equity portfolio by type				
Publicly traded stocks	$ 8,873	61%	$ 8,465	62%
Privately held stocks	417	3	399	3
Sub-total	9,290	64	8,864	65
Investment properties	5,218	36	4,851	35
Total	$ 14,508	100%	$ 13,715	100%

Investment properties

	December 31, 2018				December 31, 2017			
	Canada	U.S.	Europe	Total	Canada	U.S.	Europe	Total
Office buildings	$ 1,015	$ –	$ 673	$ 1,688	$ 872	$ –	$ 635	$ 1,507
Industrial	363	–	783	1,146	340	–	676	1,016
Retail	210	–	1,045	1,255	222	–	1,167	1,389
Other	742	7	380	1,129	526	5	408	939
Total	$ 2,330	$ 7	$ 2,881	$ 5,218	$ 1,960	$ 5	$ 2,886	$ 4,851

Impaired investments – Impaired investments include bonds in default, mortgages in default or in the process of foreclosure, investment properties acquired by foreclosure and other assets where management no longer has reasonable assurance that all contractual cash flows will be received.

Impaired investments

	December 31, 2018				December 31, 2017			
	Gross amount	Impairment recovery	Impairment provision	Carrying amount	Gross amount	Impairment recovery	Impairment provision	Carrying amount
Fair value through profit or loss	$ 164	$ 15	$ (1)	$ 178	$ 213	$ 20	$ –	$ 233
Available-for-sale	31	1	(2)	30	16	2	(1)	17
Loans and receivables	48	–	(20)	28	81	–	(40)	41
Total	$ 243	$ 16	$ (23)	$ 236	$ 310	$ 22	$ (41)	$ 291

The gross amount of impaired investments totalled $243 million or 0.1% of invested assets at December 31, 2018 compared to $310 million or 0.2% at December 31, 2017, a net decrease of $67 million. The decrease in impaired investments was primarily due to dispositions and repayments.

The impairment recovery at December 31, 2018 was $16 million, which reflects the improvement in market values of certain investments from the date at which they became impaired. The impairment provision at December 31, 2018 was $23 million, compared to $41 million at December 31, 2017. The decrease was primarily due to the disposal of impaired U.K. mortgages. While the fair values have improved on certain impaired assets, these assets remain impaired based on other impairment factors as described in the "Summary of Critical Accounting Estimates" section of this document and in note 2 of the Company's December 31, 2018 annual consolidated financial statements.

Provision for future credit losses

As a component of insurance contract liabilities, the total actuarial provision for future credit losses is determined consistent with the Canadian Institute of Actuaries' Standards of Practice and includes provisions for adverse deviation.

At December 31, 2018, the total actuarial provision for future credit losses in insurance contract liabilities was $2,595 million compared to $2,891 million at December 31, 2017, a decrease of $296 million, primarily due to the impact of basis changes, partially offset by the impact of currency movement, rating changes and the acquisition of Retirement Advantage.

The aggregate of impairment provisions of $23 million ($41 million at December 31, 2017) and actuarial provisions for future credit losses in insurance contract liabilities of $2,595 million ($2,891 million at December 31, 2017) represents 1.7% of bond and mortgage assets, including funds held by ceding insurers, at December 31, 2018 (2.0% at December 31, 2017).

United Kingdom Property Related Exposures

Holdings of United Kingdom Mortgages and Investment Properties

	December 31, 2018							December 31, 2017
	Multi-family residential	Retail & shopping centres	Office buildings	Industrial	Equity release	Other	Total	Total
Mortgages	$ 444	$ 1,647	$ 615	$ 890	$ 813	$ 516	$ 4,925	$ 3,921
Investment properties	–	1,026	669	783	–	372	2,850	2,852
Total	$ 444	$ 2,673	$ 1,284	$ 1,673	$ 813	$ 888	$ 7,775	$ 6,773

At December 31, 2018, the Company's holdings of property related investments in the U.K. were $7.8 billion ($6.8 billion at December 31, 2017) or 4.4% of invested assets. The $1.0 billion increase from December 31, 2017 was primarily due to the addition of equity release mortgages through the acquisition of Retirement Advantage and the impact of currency movement as the British pound strengthened against the Canadian dollar. Holdings in Central London were $2.3 billion ($2.1 billion at December 31, 2017) or 1.3% of invested assets, while holdings in other regions of the U.K. were $5.5 billion ($4.7 billion at December 31, 2017) or 3.1% of invested assets. These holdings were well diversified across property type – Retail (34%), Industrial/Other (33%), Office (17%), Equity release (10%) and Multi-family (6%). Of the Retail sector holdings, 46% relate to warehouse/distribution and other retail, 33% relate to shopping centres and department stores and 21% relate to grocery retail sub-categories. The weighted average loan-to-value ratio of the mortgages was 51% and the weighted average debt-service coverage ratio was 2.5 at December 31, 2018. At December 31, 2018, the weighted average mortgage and property lease term exceeded 11 years.

In the third quarter of 2018, four of the Company's U.K. investment properties were impacted as certain U.K. retailers occupying the Company's properties experienced financial difficulties. For these four properties, a decline in the expected cash flows from the properties resulted in an increase in insurance contract liabilities, which negatively impacted common shareholders' net earnings by $38 million.

Derivative Financial Instruments

There were no major changes to the Company's policies and procedures with respect to the use of derivative financial instruments in 2018. The Company's derivative transactions are generally governed by International Swaps and Derivatives Association, Inc. (ISDA) Master Agreements, which provide for legally enforceable set-off and close-out netting of exposure to specific counterparties in the event of an early termination of a transaction, which includes, but is not limited to, events of default and bankruptcy. In the event of an early termination, the Company is permitted to set off receivables from a counterparty against payables to the same counterparty, in the same legal entity, arising out of all included transactions. The Company's ISDA Master Agreements may include Credit Support Annex provisions, which require both the pledging and accepting of collateral in connection with its derivative transactions.

At December 31, 2018, total financial collateral, including initial margin and overcollateralization, received on derivative assets was $113 million ($77 million at December 31, 2017) and pledged on derivative liabilities was $691 million ($437 million at December 31, 2017). Collateral received on derivative assets increased as a result of an increase in derivative assets, primarily driven by the impact of the U.S. dollar strengthening against the British pound on cross-currency swaps that pay British pounds and receive U.S. dollars. Collateral pledged on derivative liabilities increased in 2018 as a result of an increase in derivative liabilities, primarily driven by the impact of the U.S. dollar strengthening against the Canadian dollar on cross-currency swaps that pay U.S. dollars and receive Canadian dollars.

During the twelve month period ended December 31, 2018, the outstanding notional amount of derivative contracts increased by $3.0 billion to $19.6 billion, primarily due to an increase in forward settling mortgage backed security transactions ("to-be-announced-securities") and regular hedging activities.

The Company's exposure to derivative counterparty credit risk, which reflects the current fair value of those instruments in a gain position at December 31, 2018 increased to $417 million from $384 million at December 31, 2017. The increase was primarily driven by the impact of the U.S. dollar strengthening against the British pound on cross-currency swaps that pay British pounds and receive U.S. dollars.

Goodwill and Intangible Assets

Goodwill and intangible assets

	December 31	
	2018	2017
Goodwill	**$ 6,548**	$ 6,179
Indefinite life intangible assets	**2,784**	2,662
Finite life intangible assets	**1,192**	1,070
Total	**$10,524**	$ 9,911

The Company's goodwill and intangible assets relate primarily to its acquisitions of London Life, Canada Life, Putnam and Irish Life. Goodwill and intangible assets of $10,524 million at December 31, 2018 increased by $613 million compared to December 31, 2017. Goodwill increased by $369 million to $6,548 million, primarily due to the acquisitions of Retirement Advantage and Invesco and the impact of currency movement. Indefinite life intangible assets increased by $122 million, primarily due to the impact of currency movement. Finite life intangible assets increased by $122 million, primarily due to the acquisition of Retirement Advantage, additions to computer software and the impact of currency movement.

IFRS principles require the Company to assess at the end of each reporting period whether there is any indication that an asset may be impaired and to perform an impairment test on goodwill and indefinite life intangible assets at least annually or more frequently if events indicate that impairment may have occurred. Intangible assets that were previously impaired are reviewed at each reporting date for evidence of reversal. Finite life intangible assets are reviewed annually to determine if there are indications of impairment and assess whether the amortization periods and methods are appropriate. In the fourth quarter of 2018, the Company conducted its annual impairment testing of goodwill and intangible assets based on September 30, 2018 asset balances. It was determined that the recoverable amounts of cash generating unit groupings were in excess of their carrying values and there was no evidence of impairment. Recoverable amount is based on fair value less cost of disposal. Management conducted an additional qualitative review of the Reinsurance cash generating unit grouping and determined that goodwill of $1 million should be written off.

Refer to note 11 in the Company's December 31, 2018 annual consolidated financial statements for further details of the Company's goodwill and intangible assets. Also, refer to the "Summary of Critical Accounting Estimates" section of this document for details on impairment testing of these assets.

Other General Fund Assets

Other general fund assets

	December 31 2018	2017
Funds held by ceding insurers	**$ 9,251**	$ 9,893
Reinsurance assets	**6,126**	5,045
Premiums in course of collection, accounts and interest receivable	**5,202**	4,647
Other assets	**2,567**	2,424
Deferred tax assets	**981**	930
Owner occupied properties	**731**	706
Fixed assets	**448**	303
Derivative financial instruments	**417**	384
Current income taxes	**218**	134
Total	**$ 25,941**	$ 24,466

Total other general fund assets at December 31, 2018 were $25.9 billion, an increase of $1.5 billion from December 31, 2017. The increase was primarily due to an increase of $1.1 billion in reinsurance assets, primarily due to the acquisition of Retirement Advantage and an increase of $0.6 billion in premiums in course of collection, accounts and interest receivable. The increase was partially offset by a decrease of $0.6 billion in funds held by ceding insurers.

Other assets comprise several items including prepaid expenses and accounts receivable. Refer to note 13 in the Company's December 31, 2018 annual consolidated financial statements for a breakdown of other assets.

Investments on Account of Segregated Fund Policyholders

Segregated funds

	December 31 2018	2017
Stock and units in unit trusts	**$ 89,853**	$ 93,465
Mutual funds	**50,956**	54,658
Bonds	**42,142**	42,270
Investment properties	**12,319**	11,520
Cash and other	**10,647**	11,232
Mortgage loans	**2,746**	2,610
Sub-total	**$208,663**	$215,755
Non-controlling mutual funds interest	**864**	1,602
Total	**$209,527**	$217,357

Investments on account of segregated fund policyholders, which are measured at fair value, decreased by $7.8 billion to $209.5 billion at December 31, 2018 compared to December 31, 2017. The decrease was primarily due to the combined impact of market value losses and investment income of $8.3 billion, funds transferred to assets held for sale of $3.3 billion related to the pending sale of a heritage block of policies to Scottish Friendly and net withdrawals of $1.8 billion, partially offset by the impact of currency movement of $5.5 billion.

Proprietary Mutual Funds

Proprietary mutual funds and institutional net assets

	December 31 2018	2017
Mutual funds		
Blend equity	**$ 23,489**	$ 30,828
Growth equity	**15,642**	15,045
Equity value	**22,003**	23,590
Fixed-income	**46,227**	35,593
Money market	**185**	156
Great-West Financial Funds (1)	**18,463**	16,585
Sub-total	**$126,009**	$121,797
Institutional accounts		
Equity	**$ 94,494**	$103,001
Fixed-income	**52,586**	46,799
Other	**8,575**	7,357
Sub-total	**$155,655**	$157,157
Total proprietary mutual funds and institutional accounts	**$281,664**	$278,954

(1) At December 31, 2018, mutual funds exclude $14.4 billion of Putnam managed funds ($13.4 billion at December 31, 2017), which are included in the categories above.

At December 31, 2018, total proprietary mutual funds and institutional accounts include $235.1 billion at Putnam and Great-West Financial, $38.6 billion at Irish Life and $6.0 billion at Quadrus Investment Services Ltd (Quadrus). Proprietary mutual funds and institutional accounts under management increased by $2.7 billion, primarily due to the positive impact of currency movement, partially offset by the negative impact of market movements and net cash outflows.

Liabilities

Total liabilities

	December 31 2018	2017
Insurance and investment contract liabilities	**$168,431**	$161,365
Liabilities held for sale	**897**	–
Other general fund liabilities	**18,117**	15,580
Investment and insurance contracts on account of segregated fund policyholders	**209,527**	217,357
Investment and insurance contracts on account of segregated fund policyholders held for sale	**3,319**	–
Total	**$400,291**	$394,302

Total liabilities increased by $6.0 billion to $400.3 billion at December 31, 2018 from December 31, 2017.

Insurance and investment contract liabilities increased by $7.1 billion, primarily due to the impact of new business, the strengthening of the British pound, euro and U.S. dollar against the Canadian dollar and the acquisition of Retirement Advantage, partially offset by the impact of fair value adjustments. Investment and insurance contracts on account of segregated fund policyholders decreased by $7.8 billion, primarily due to the combined impact of market value losses and investment income of $8.3 billion, funds transferred to assets held for sale of $3.3 billion and net withdrawals of $1.8 billion, partially offset by the impact of currency movement of $5.5 billion.

Liabilities held for sale of $0.9 billion and investment and insurance contracts on account of segregated fund policyholders held for sale of $3.3 billion at December 31, 2018 relate to the pending sale of a heritage block of policies to Scottish Friendly, which is expected to close in the second half of 2019. Refer to note 4 of the Company's December 31, 2018 consolidated financial statements for further information on assets classified as held for sale.

Insurance and investment contract liabilities represent the amounts that, together with estimated future premiums and investment income, will be sufficient to pay estimated future benefits, dividends and expenses on policies in-force. Insurance and investment contract liabilities are determined using generally accepted actuarial practices, according to standards established by the Canadian Institute of Actuaries. Also, refer to the "Summary of Critical Accounting Estimates" section of this document for further details.

Assets supporting insurance and investment contract liabilities

	Participating Account	Non-Participating			Total
		Canada	United States	Europe	
December 31, 2018					
Bonds	**$ 23,892**	**$ 19,204**	**$ 25,324**	**$ 35,174**	**$ 103,594**
Mortgage loans	**9,918**	**3,845**	**4,993**	**4,511**	**23,267**
Stocks	**5,465**	**1,916**	**–**	**191**	**7,572**
Investment properties	**1,926**	**196**	**–**	**2,795**	**4,917**
Other assets (1)	**9,726**	**5,013**	**725**	**13,617**	**29,081**
Total assets	**$ 50,927**	**$ 30,174**	**$ 31,042**	**$ 56,288**	**$ 168,431**
Total insurance and investment contract liabilities	**$ 50,927**	**$ 30,174**	**$ 31,042**	**$ 56,288**	**$ 168,431**
December 31, 2017					
Bonds	$ 23,410	$ 19,486	$ 23,400	$ 33,037	$ 99,333
Mortgage loans	8,959	3,777	4,268	3,569	20,573
Stocks	5,142	2,027	–	262	7,431
Investment properties	1,689	134	–	2,810	4,633
Other assets (1)	9,671	4,607	1,146	13,971	29,395
Total assets	$ 48,871	$ 30,031	$ 28,814	$ 53,649	$ 161,365
Total insurance and investment contract liabilities	$ 48,871	$ 30,031	$ 28,814	$ 53,649	$ 161,365

(1) Other assets include premiums in the course of collection, interest due and accrued, other investment receivables, current income taxes, prepaid expenses, accounts receivable and deferred acquisition costs.

Asset and liability cash flows are matched within reasonable limits to minimize the financial effects of a shift in interest rates and mitigate the changes in the Company's financial position due to interest rate volatility.

Other General Fund Liabilities

Other general fund liabilities

	December 31	
	2018	2017
Debentures and other debt instruments	**$ 6,459**	$ 5,777
Other liabilities	**3,855**	3,752
Accounts payable	**3,262**	2,684
Derivative financial instruments	**1,562**	1,336
Funds held under reinsurance contracts	**1,367**	373
Deferred tax liabilities	**1,210**	1,194
Current income taxes	**402**	464
Total	**$18,117**	$ 15,580

Total other general fund liabilities at December 31, 2018 were $18.1 billion, an increase of $2.5 billion from December 31, 2017, primarily due to an increase of $1.0 billion in funds held under reinsurance contracts related to the acquisition of Retirement Advantage, an increase of $0.7 billion in debentures and other debt instruments, an increase of $0.6 billion in accounts payable, and an increase of $0.2 billion in derivative financial instruments.

Other liabilities of $3.9 billion include pension and other post-employment benefits, deferred income reserve, bank overdraft and other liability balances. Refer to note 18 in the Company's December 31, 2018 annual consolidated financial statements for a breakdown of the other liabilities balance and note 16 in the Company's December 31, 2018 annual consolidated financial statements for details of the debentures and other debt instruments.

Segregated Fund and Variable Annuity Guarantees

The Company offers retail segregated fund products, unitized with profits (UWP) products and variable annuity products that provide for certain guarantees that are tied to the market values of the investment funds.

The Company utilizes internal reinsurance treaties to aggregate the business as a risk-mitigating tool. Aggregation enables the Company to benefit from diversification of segregated fund risks within one legal entity, a more efficient and cost effective hedging process, and better management of the liquidity risk associated with hedging. It also results in the Company holding lower required capital and insurance contract liabilities, as aggregation of different risk profiles allows the Company to reflect offsets at a consolidated level.

In Canada, the Company offers individual segregated fund products through Great-West Life, London Life and Canada Life. These products provide guaranteed minimum death benefits (GMDB) and guaranteed minimum accumulation on maturity benefits (GMAB). In 2009, Great-West Life, London Life and Canada Life launched new individual segregated fund products, which offer three levels of death and maturity guarantees, guarantee reset riders and lifetime guaranteed minimum withdrawal benefits (GMWB).

For a certain generation of products, the guarantees in connection with the Canadian individual segregated fund businesses of Great-West Life, London Life and Canada Life have been reinsured to London Reinsurance Group Inc. (LRG), a subsidiary of London Life. This does not include the guarantees on newer Canadian products, which have been reinsured to London Life. In addition to the guarantees reinsured from Great-West Life, London Life and Canada Life, LRG also has a closed portfolio of GMDB, GMAB and guaranteed minimum income benefits (GMIB) that it has reinsured from other U.S. and Canadian life insurance and reinsurance companies.

In Europe, the Company offers UWP products through Canada Life and unit-linked products with investment guarantees through Irish Life. These products are similar to segregated fund products, but include pooling of policyholders' funds and minimum credited interest rates. The Company also offers a GMWB product in Germany through Canada Life.

In the U.S., the Company offers variable annuities with GMDB through Great-West Financial. For the standalone GMDB business, most are a return of premium on death with the guarantee expiring at age 70. Great-West Financial in the U.S. also offers a GMWB product with an optional GMDB feature that does not expire with age.

The GMWB products offered by the Company in Canada, the U.S. and Germany, and previously offered in Ireland, provide the policyholder with a guaranteed minimum level of annual income for life. The minimum level of income may increase depending upon the level of growth in the market value of the policyholder's funds. Where the market value of the policyholder's funds is ultimately insufficient to meet the level of guarantee purchased by the policyholder, the Company is obligated to make up the shortfall.

These products involve cash flows of which the magnitude and timing are uncertain and are dependent on the level of equity and fixed-income market returns, interest rates, currency markets, market volatility, policyholder behaviour and policyholder longevity.

The Company has a hedging program in place to manage certain risks associated with options embedded in its GMWB products. The program methodology quantifies both the embedded option value and its sensitivity to movements in equity markets, currency markets and interest rates. Equity derivative instruments, currency derivative instruments and interest rate derivative instruments are used to mitigate changes in the embedded option value attributable to movements in equity markets, currency markets and interest rates respectively. The hedging program, by its nature, requires continuous monitoring and rebalancing to avoid over or under hedged positions. Periods of heightened market volatility will increase the frequency of hedge rebalancing.

By their nature, certain risks associated with the GMWB product either cannot be hedged, or cannot be hedged on a cost effective basis. These risks include policyholder behaviour, policyholder longevity and basis risk and market volatility. Consequently, the hedging program will not mitigate all risks to the Company associated with the GMWB products, and may expose the Company to additional risks including the operational risk associated with the reliance upon sophisticated models, and counterparty credit risk associated with the use of derivative instruments.

Other risk management processes are in place aimed at appropriately limiting the Company's exposure to the risks it is not hedging or are otherwise inherent in its GMWB hedging program. In particular, the GMWB product has been designed with specific regard to limiting policyholder anti-selection, and the array of investment funds available to policyholders has been determined with a view to minimizing underlying basis risk.

Certain GMWB products offered by the Company offer levels of death and maturity guarantees. At December 31, 2018, the amount of GMWB product in-force in Canada, the U.S., Ireland and Germany was $4,169 million ($4,225 million at December 31, 2017).

Segregated fund and variable annuity guarantee exposure

		December 31, 2018 Investment deficiency by benefit type			
	Market Value	Income	Maturity	Death	Total (1)
Canada	$ 30,505	$ –	$ 35	$ 290	$ 290
United States	12,359	163	–	116	248
Europe					
Insurance & Annuities	9,597	15	5	762	762
Reinsurance (2)	1,012	334	1	13	347
Total Europe	10,609	349	6	775	1,109
Total	**$ 53,473**	**$ 512**	**$ 41**	**$ 1,181**	**$ 1,647**

(1) A policy can only receive a payout from one of the three trigger events (income election, maturity or death). Total deficiency measures the point-in-time exposure assuming the most costly trigger event for each policy occurred on December 31, 2018.

(2) Reinsurance exposure is to markets in Canada and the U.S.

The investment deficiency measures the point-in-time exposure to a trigger event (i.e., income election, maturity or death) assuming it occurred on December 31, 2018. The actual cost to the Company will depend on the trigger event having occurred and the market values at that time. The actual claims before tax associated with these guarantees were $2 million in-quarter ($5 million for the fourth quarter of 2017) and $14 million year-to-date ($18 million year-to-date for 2017), with the majority arising in the Reinsurance business unit in the Europe segment.

Lifeco Capital Structure

In establishing the appropriate mix of capital required to support the operations of the Company and its subsidiaries, management utilizes a variety of debt, equity and other hybrid instruments giving consideration to both the short and long-term capital needs of the Company.

Debentures and Other Debt Instruments

At December 31, 2018, debentures and other debt instruments increased by $682 million to $6,459 million compared to December 31, 2017, primarily due to net debt issuances of $415 million as well as the impact of currency movement. As a result of the net debt issuances, financing charges for the twelve months ending December 31, 2018 were $221 million, compared to $300 million for the same period last year.

On February 28, 2018, the Company issued $500 million principal amount 3.337% debentures at par, maturing on February 28, 2028. Interest on the debentures is payable semi-annually in arrears on February 28 and August 28, commencing August 28, 2018 until the date on which the debentures are repaid. The debentures are redeemable at any time prior to November 28, 2027 in whole or in part at the greater of the Canada Yield Price (as defined in the trust indenture governing the debentures) and par, and on or after November 28, 2027 in whole or in part at par, together in each case with accrued and unpaid interest.

On March 8, 2018, following a successful consent solicitation with respect to its 6.625% deferrable debentures due November 15, 2034, Great-West Life & Annuity Insurance Capital, LP, a subsidiary of the Company, together with other indirect subsidiaries of the Company and the trustee for the debentures, entered into a supplemental trust indenture to effect certain amendments to the terms of the debentures. The amendments included a change to certain tax election provisions and the termination of a replacement capital covenant. Great-West Life & Annuity Insurance Capital, LP made a cash payment of US$0.25 for each US$1,000 aggregate principal amount of debentures for which a consent was given.

On March 21, 2018, the Company's 6.14% $200 million debentures matured and were repaid at their principal amount together with accrued interest.

On May 17, 2018, Great-West Lifeco Finance 2018, LP, a subsidiary of the Company, issued $384 million (US$300 million) aggregate principal amount 4.047% senior notes due May 17, 2028 and $640 million (US$500 million) aggregate principal amount 4.581% senior notes due May 17, 2048. The tranches of senior notes are fully and unconditionally guaranteed by the Company.

On June 18, 2018, Great-West Life & Annuity Insurance Capital, LPII, a subsidiary of the Company, redeemed all $399 million (US$300 million) aggregate principal amount 2.538% plus 3-month LIBOR unsecured subordinated debentures due May 16, 2046. The interest payments on this debt were hedged using an interest rate swap designated as a cash flow hedge. The interest rate hedge was terminated prior to the redemption of the underlying debentures. On redemption of the underlying debentures, a gain of $51 million ($65 million pre-tax) on the interest rate hedge was recognized within the U.S. Corporate results.

On June 26, 2018, Great-West Lifeco Finance (Delaware) LPII, a subsidiary of the Company, redeemed all $500 million aggregate principal amount 7.127% unsecured subordinated debentures due June 26, 2048 at their principal amount, together with accrued interest, at first par call date. The repayment of the debenture was hedged using a cross-currency swap designated as a cash-flow hedge. The redemption of debentures and derecognition of the swap resulted in an increase of $13 million ($21 million pre-tax) to net earnings. Also, as a result of this redemption, there was a loss on a foreign exchange forward that resulted in a net decrease of $4 million ($5 million pre-tax) to net earnings. The net of these items, $9 million ($16 million pre-tax) is included within the U.S. Corporate results.

Refer to note 16 in the Company's December 31, 2018 annual consolidated financial statements for further details of the Company's debentures and other debt instruments.

Capital Trust Securities

At December 31, 2018, the Company had $150 million principal outstanding of Canada Life Capital Trust Securities – Series B (CLiCS – Series B). Included in the Company's invested assets at December 31, 2018 were CLiCS – Series B with a fair value of $51 million and principal value of $37 million (fair value of $52 million at December 31, 2017).

Each holder of the CLiCS – Series B is entitled to receive a semi-annual non-cumulative fixed cash distribution of $37.645 per CLiCS – Series B, representing an annual yield of 7.529% payable out of Canada Life Capital Trust's (CLCT) distributable funds. Subject to regulatory approval, CLCT may redeem the CLiCS – Series B, in whole or in part, at any time and the CLiCS – Series B are callable at par on June 30, 2032.

Equity

Share capital outstanding at December 31, 2018 was $9,997 million, which comprises $7,283 million of common shares, $2,464 million of fixed rate First Preferred Shares, $213 million of 5-year rate reset First Preferred Shares and $37 million of floating rate First Preferred Shares.

Common shares

At December 31, 2018, the Company had 987,739,408 common shares outstanding with a stated value of $7,283 million compared to 988,722,659 common shares with a stated value of $7,260 million at December 31, 2017.

The Company commenced a normal course issuer bid (NCIB) on January 15, 2018 for one year to purchase and cancel up to 20,000,000 of its common shares at market prices in order to mitigate the dilutive effect of stock options granted under the Company's Stock Option Plan and for other capital management purposes.

During the twelve months ended December 31, 2018, the Company repurchased and subsequently cancelled 2,127,300 common shares (2017 – 1,800,000) under its NCIB at an average cost per share of $32.25 (2017 – $35.18).

Subsequent to December 31, 2018, in order to mitigate the dilutive effect of stock options granted under the Company's Stock Option Plan and for other capital management purposes, the Company announced a normal course issuer bid commencing February 1, 2019 and terminating January 31, 2020 to purchase for cancellation up to but not more than 20,000,000 of its common shares at market prices.

Preferred shares

At December 31, 2018, the Company had 11 series of fixed rate First Preferred Shares, one series of 5-year rate reset First Preferred Shares and one series of floating rate First Preferred Shares outstanding with aggregate stated values of $2,464 million, $213 million and $37 million, respectively.

The terms and conditions of the outstanding First Preferred Shares are set out in the table below:

	Great-West Lifeco Inc.						
	Series F	Series G	Series H	Series I	Series L	Series M	Series N (1)
General Type	Fixed Rate	Fixed Rate	Fixed Rate	Fixed Rate	Fixed Rate	Fixed Rate	5-Year Rate Reset
Cumulative/Non-Cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative
Date Issued	Jul 10, 2003	Sep 14, 2004	Aug 12, 2005	Apr 12, 2006	Oct 2, 2009	Mar 4, 2010	Nov 23, 2010
Shares Outstanding	7,740,032	12,000,000	12,000,000	12,000,000	6,800,000	6,000,000	8,524,422
Amount Outstanding (Par)	$193,500,800	$300,000,000	$300,000,000	$300,000,000	$170,000,000	$150,000,000	$213,110,550
Yield	5.90%	5.20%	4.85%	4.50%	5.65%	5.80%	2.176%
Earliest Issuer Redemption Date	Sep 30, 2008	Dec 31, 2009	Sep 30, 2010	Jun 30, 2011	Dec 31, 2014	Mar 31, 2015	Dec 31, 2020

	Great-West Lifeco Inc.					
	Series O (2)	Series P	Series Q	Series R	Series S	Series T
General Type	Floating Rate	Fixed Rate	Fixed Rate	Fixed Rate	Fixed Rate	Fixed Rate
Cumulative/Non-Cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative
Date Issued	Dec 31, 2015	Feb 22, 2012	Jul 6, 2012	Oct 11, 2012	May 22, 2014	May 18, 2017
Shares Outstanding	1,475,578	10,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Amount Outstanding (Par)	$36,889,450	$250,000,000	$200,000,000	$200,000,000	$200,000,000	$200,000,000
Yield	Floating	5.40%	5.15%	4.80%	5.25%	5.15%
Earliest Issuer Redemption Date	Dec 31, 2015	March 31, 2017	Sep 30, 2017	Dec 31, 2017	Jun 30, 2019	Jun 30, 2022

(1) The Series N, Non-Cumulative 5-Year Rate Reset First Preferred Shares carry an annual fixed non-cumulative dividend rate of 2.176% up to but excluding December 31, 2020 and are redeemable at the option of the Company on December 31, 2020 and on December 31 every five years thereafter for $25.00 per share plus all declared and unpaid dividends up to but excluding the date of redemption. Subject to the Company's right of redemption and certain other restrictions on conversion described in the Series N share conditions, each Series N share is convertible into one Series O share at the option of the holders on December 31, 2020 and on December 31 every five years thereafter.

(2) The Series O, Non-Cumulative Floating Rate First Preferred Shares carry a floating non-cumulative dividend rate equal to the relevant Government of Canada Treasury Bill rate plus 1.30% and are redeemable at the option of the Company for $25.50 per share, unless the shares are redeemed on December 31, 2020 or on December 31 every five years thereafter in which case the redemption price will be $25.00 per share, plus in each case all declared and unpaid dividends up to but excluding the date of redemption. Subject to the Company's right of redemption and certain other restrictions on conversion described in the Series O share conditions, each Series O share is convertible into one Series N share at the option of the holders on December 31, 2020 and on December 31 every five years thereafter.

The terms and conditions of the First Preferred Shares do not allow the holder to convert to common shares of the Company or to otherwise cause the Company to redeem the shares. Preferred shares issued by the Company are commonly referred to as perpetual and represent a form of financing that does not have a fixed term.

Non-Controlling Interests

The Company's non-controlling interests include participating account surplus in subsidiaries and non-controlling interests in subsidiaries. Refer to note 19 in the Company's December 31, 2018 annual consolidated financial statements for further details of the Company's non-controlling interests.

Non-controlling interests

	December 31	
	2018	2017
Participating account surplus in subsidiaries:		
Great-West Life	$ 608	$ 622
London Life	1,827	1,796
Canada Life	288	339
Great-West Financial	14	14
	$ 2,737	$ 2,771
Non-controlling interests in subsidiaries	$ 138	$ 164

At December 31, 2018, the carrying value of non-controlling interests decreased by $60 million to $2,875 million compared to December 31, 2017. The decrease reflected net earnings attributable to participating account before policyholder dividends of $1,332 million, policyholder dividends of $1,352 million as well as the impact of the acquisitions of PanAgora and Invesco non-controlling interests.

Liquidity and Capital Management and Adequacy

Liquidity

The Company's liquidity requirements are largely self-funded, with short-term obligations being met by internal funds and maintaining adequate levels of liquid investments. The Company holds cash, cash equivalents and short-term bonds at the Lifeco holding company level and with the Lifeco consolidated subsidiary companies. At December 31, 2018, the Company and its operating subsidiaries held cash, cash equivalents and short-term bonds of $7.8 billion ($7.3 billion at December 31, 2017) and other liquid assets and marketable securities of $93.2 billion ($93.8 billion at December 31, 2017). Included in the cash, cash equivalents and short-term bonds at December 31, 2018 was $1.0 billion ($0.5 billion at December 31, 2017) at the Lifeco holding company level. In addition, the Company maintains sufficient committed lines of credit with Canadian chartered banks for unanticipated liquidity needs, if required.

The Company does not have a formal common shareholder dividend policy. Dividends on outstanding common shares of the Company are declared and paid at the sole discretion of the Board of Directors of the Company. The decision to declare a dividend on the common shares of the Company takes into account a variety of factors including the level of earnings, adequacy of capital and availability of cash resources.

As a holding company, the Company's ability to pay dividends is dependent upon the Company receiving dividends from its operating subsidiaries. The Company's operating subsidiaries are subject to regulation in a number of jurisdictions, each of which maintains its own regime for determining the amount of capital that must be held in connection with the different businesses carried on by the operating subsidiaries. The requirements imposed by the regulators in any jurisdiction may change from time to time, and thereby impact the ability of the operating subsidiaries to pay dividends to the Company.

Cash Flows

Cash flows

	For the three months ended December 31		For the twelve months ended December 31	
	2018	2017	**2018**	2017
Cash flows relating to the following activities:				
Operations	**$ 1,565**	$ 2,287	**$ 6,494**	$ 6,757
Financing	**(260)**	(256)	**(1,267)**	(1,659)
Investment	**(1,170)**	(1,627)	**(4,776)**	(4,778)
	135	404	**451**	320
Effects of changes in exchange rates on cash and cash equivalents	**151**	41	**166**	(28)
Increase (decrease) in cash and cash equivalents in the period	**286**	445	**617**	292
Cash and cash equivalents, beginning of period	**3,882**	3,106	**3,551**	3,259
Cash and cash equivalents, end of period	**$ 4,168**	$ 3,551	**$ 4,168**	$ 3,551

The principal source of funds for the Company on a consolidated basis is cash provided by operating activities, including premium income, net investment income and fee income. These funds are used primarily to pay policy benefits, policyholder dividends and claims, as well as operating expenses and commissions. Cash flows generated by operations are mainly invested to support future liability cash requirements. Cash flows related to financing activities include the issuance and repayment of capital instruments and associated dividends and interest payments.

In the fourth quarter of 2018, cash and cash equivalents increased by $286 million from September 30, 2018. Cash flows provided by operations during the fourth quarter of 2018 were $1,565 million, a decrease of $722 million compared to the fourth quarter of 2017. Cash flows used in financing were $260 million, primarily due to the payment of dividends to the preferred and common shareholders of $417 million, partially offset by an increase to a line of credit of a subsidiary of $178 million. For the three months ended December 31, 2018, cash flows were used by the Company to acquire an additional $1,170 million of investment assets.

For the twelve months ended December 31, 2018, cash and cash equivalents increased by $617 million from December 31, 2017. Cash flows provided by operations were $6,494 million, a decrease of $263 million compared to the same period in 2017. Cash flows used in financing were $1,267 million, primarily used for payments of dividends to preferred and common shareholders of $1,671 million and the net purchase and cancellation of common shares of $30 million, partially offset by the net issuance of debt of $415 million. In the first quarter of 2018, the Company increased the quarterly dividend to common shareholders from $0.367 per common share to $0.389 per common share. For the twelve months ended December 31, 2018, cash flows were used by the Company to acquire an additional $4,776 million of investment assets and for net business acquisitions.

Commitments/Contractual Obligations

Commitments/contractual obligations

At December 31, 2018	Payments due by period Total	1 year	2 years	3 years	4 years	5 years	Over 5 years
1) Debentures and other debt instruments	$ 5,879	$ –	$ 500	$ –	$ –	$ 779	$ 4,600
2) Operating leases							
– office & land	895	108	96	85	76	66	464
– equipment	5	3	2	–	–	–	–
3) Purchase obligations	237	90	91	37	17	2	–
4) Credit-related arrangements							
(a) Contractual commitments	955	894	61	–	–	–	–
(b) Letters of credit	see note 4(b) below						
5) Pension contributions	295	295	–	–	–	–	–
Total contractual obligations	**$ 8,266**	**$ 1,390**	**$ 750**	**$ 122**	**$ 93**	**$ 847**	**$ 5,064**

1) Refer to note 16 in the Company's December 31, 2018 annual consolidated financial statements. Excluded from debentures and other debt instruments are unamortized transaction costs.

2) Operating leases include office space, land and certain equipment used in the normal course of business. Lease payments are charged to operations over the period of use.

3) Purchase obligations are commitments to acquire goods and services, essentially related to information services.

4) (a) Contractual commitments are essentially commitments of investment transactions made in the normal course of operations in accordance with policies and guidelines that are to be disbursed upon fulfillment of certain contract conditions.

(b) Letters of credit (LC) are written commitments provided by a bank. The total amount of LC facilities is US$2.1 billion of which US$1.7 billion were issued as of December 31, 2018.

The Reinsurance operation periodically uses letters of credit as collateral under certain reinsurance contracts for on-balance sheet policy liabilities. The Company may be required to seek collateral alternatives if it is unable to renew existing LCs on maturity. Various Lifeco subsidiaries have provided LCs as follows:

To external parties

Clients residing in the United States are required pursuant to their insurance laws to obtain LCs issued on the Company's behalf from approved banks in order to further secure the Company's obligations under certain reinsurance contracts.

Great-West Life has a LC facility for US$600 million with a bank syndicate, which can be used by Great-West Life and its subsidiaries. As of December 31, 2018, Great-West Life subsidiaries have issued US$106 million to external parties.

Great-West Life also has a LC facility for US$375 million for use by Great-West Life and its subsidiaries. Under this facility, Canada Life has issued US$45 million to external parties. Subsequent to December 31, 2018, this facility's capacity was increased to US$500 million.

Certain London Reinsurance Group subsidiaries and London Life have provided LCs totaling US$6 million to external parties. Additionally, Great-West Life & Annuity Insurance Company has provided LCs totaling US$9 million to external parties. The LCs are renewable annually for an indefinite period of time. At December 31, 2018 and 2017, there were no outstanding amounts related to those LCs.

To internal parties

Great-West Life & Annuity Insurance Company also has a US$70 million LC facility in place. As of December 31, 2018, US$70 million has been issued to Great-West Life & Annuity Insurance Company of South Carolina as beneficiary, to allow it to receive statutory capital credit.

Canada Life has a £117 million LC issued to Canada Life Limited (CLL) as beneficiary, to allow CLL to receive statutory capital credit in the United Kingdom for a loan made from Canada Life.

Great-West Life also has a LC facility for US$250 million for use by Great-West Life and its subsidiaries. As of December 31, 2018, US$224 million has been issued to Canada Life's U.S. Branch.

Great-West Life also has a LC facility for US$400 million for use by Great-West Life and its subsidiaries. As of December 31, 2018, US$400 million has been issued to Canada Life's U.S. Branch.

Great-West Life also has a LC facility for US$250 million for use by Great-West Life and its subsidiaries. As of December 31, 2018, US$250 million has been issued to Canada Life's U.S. Branch.

In addition, using capacity from the facilities listed above, Great-West Life subsidiaries have issued US$452 million to other subsidiaries.

5) Pension contributions include funding estimates for defined benefit pension plans, defined contribution pension plans and other post-employment plans. These contributions are subject to change, as contribution decisions are affected by many factors including market performance, regulatory requirements and management's ability to change funding policy. Funding estimates beyond 2019 are excluded due to the significant variability in the assumptions required to project the timing of future contributions.

Capital Management and Adequacy

At the holding company level, the Company monitors the amount of consolidated capital available and the amounts deployed in its various operating subsidiaries. The amount of capital deployed in any particular company or country is dependent upon local regulatory requirements as well as the Company's internal assessment of capital requirements in the context of its operational risks and requirements and strategic plans. The Company's practice is to maintain the capitalization of its regulated operating subsidiaries at a level that will exceed the relevant minimum regulatory capital requirements in the jurisdictions in which they operate. The capitalization decisions of the Company and its operating subsidiaries also give consideration to the impact such actions may have on the opinions expressed by various credit rating agencies that provide financial strength and other ratings to the Company.

In Canada, OSFI has established a capital adequacy measurement for life insurance companies incorporated under the Insurance Companies Act (Canada) and their subsidiaries, known as the LICAT. Effective January 1, 2018, the LICAT ratio replaced the prior Minimum Continuing Capital Surplus Requirements (MCCSR) ratio. The LICAT results are fundamentally different, and thus cannot be compared to the MCCSR ratio.

The LICAT ratio compares the regulatory capital resources of a company to its Base Solvency Buffer or required capital. The Base Solvency Buffer is calibrated so that a life insurer can both withstand severe stress events and have assets remaining to allow continued support of its existing business. The total Base Solvency Buffer is the aggregate of all OSFI defined capital requirements multiplied by a fixed scalar of 1.05. The total capital resources include equity items such as common shares, retained earnings and participating policyholders' surplus. There are deductions for goodwill, intangibles and some deferred tax assets. Assets backing certain provisions for adverse deviation within the insurance contract liabilities reported on the financial statements are also included in total capital resources.

OSFI has established a Supervisory Target Total Ratio of 100%, and a Supervisory Minimum Total Ratio of 90%. The internal target range of the LICAT ratio for Lifeco's major Canadian operating subsidiaries is 110% to 120% (on a consolidated basis).

Great-West Life's consolidated LICAT ratio at December 31, 2018 was 140% (134% at September 30, 2018). The LICAT ratio does not take into account any impact from $1.0 billion of liquidity at the Lifeco holding company level at December 31, 2018 ($0.5 billion at December 31, 2017).

LICAT Ratio

	Dec. 31 2018	Sept. 30 2018
Tier 1 Capital	**$12,455**	$ 12,315
Tier 2 Capital	**3,686**	3,255
Total Available Capital	**16,141**	15,570
Surplus Allowance & Eligible Deposits	**10,665**	10,258
Total Capital Resources	**$26,806**	$ 25,828
Base Solvency Buffer (includes OSFI scalar 1.05)	**$19,165**	$ 19,322
Total Ratio (OSFI Supervisory Target = 100%) (1)	**140%**	134%

(1) Total Ratio (%) = Total Capital Resources / Base Solvency Buffer (after 1.05 scalar)

At December 31, 2018, the Risk-Based Capital (RBC) ratio of Great-West Life & Annuity Insurance Company, Lifeco's regulated U.S. operating company, is estimated to be 452% of the Company Action Level set by the National Association of Insurance Commissioners. Great-West Life & Annuity Insurance Company reports its RBC ratio annually to U.S. Insurance Regulators.

The Board of Directors reviews and approves an annual capital plan as well as capital transactions undertaken by management pursuant to the plan. The capital plan is designed to ensure that the Company maintains adequate capital, taking into account the Company's strategy, risk profile and business plans. The Company has established policies and procedures designed to identify, measure and report all material risks. Management is responsible for establishing capital management procedures for implementing and monitoring the capital plan. In addition to undertaking capital transactions, the Company uses and provides traditional and structured reinsurance to support capital and risk management.

OSFI Regulatory Capital Initiatives

The Company is evaluating the impact of the 2019 OSFI LICAT Guideline changes, including the application of IFRS 16 *Leases*, and does not anticipate that there will be a material impact to the LICAT ratio.

The IASB has issued IFRS 17, *Insurance Contracts*, which will replace IFRS 4, *Insurance Contracts*. The IASB Board agreed to implementation of IFRS 17, for periods beginning on or after January 1, 2022. IFRS 17 includes, among other things, new requirements for the recognition and measurement of insurance contracts the Company issues and reinsurance contracts it holds. The new standard is expected to have a significant impact for insurers related to the timing of earnings recognition and on the presentation and disclosure of results. Adoption of the standard is expected to lead to further review and possible amendments to the OSFI LICAT Guideline.

The Company will continue to work with OSFI, the Canadian Institute of Actuaries, and other industry participants, as the LICAT guideline further evolves to allow for any future development including adaptations relating to the IFRS 17 accounting standard and developments relating to Segregated Fund Guarantee Risk requirements.

Capital Allocation Methodology

The Company has a capital allocation methodology, which allocates financing costs in proportion to allocated capital. For the Canadian and European segments (essentially Great-West Life), this allocation method generally tracks the regulatory capital requirements, while for U.S. Financial Services and U.S. Asset Management (Putnam), it tracks the financial statement carrying value of the business units. Total leverage capital is consistently allocated across all business units in proportion to total capital resulting in a debt-to-equity ratio in each business unit mirroring the consolidated Company.

The capital allocation methodology allows the Company to calculate comparable return on equity (ROE) for each business unit. These ROEs are therefore based on the capital the business unit has been allocated and the financing charges associated with that capital.

Return on equity – Net earnings basis (1)

	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017
Canada	19.4%	20.7%	17.5%
U.S. Financial Services	12.1%	17.9%	17.4%
U.S. Asset Management (Putnam)	(2.5)%	(29.3)%	(24.2)%
Europe	15.9%	16.1%	15.4%
Lifeco Corporate	(2.0)%	(2.3)%	(4.3)%
Total Lifeco Net Earnings Basis	14.0%	12.8%	10.9%

Return on Equity – Adjusted net earnings basis (1) (2)

	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017
Canada (3)	19.4%	21.0%	19.9%
U.S. Financial Services (4)	12.1%	12.3%	11.4%
U.S. Asset Management (Putnam) (5)	(2.5)%	(1.4)%	(0.9)%
Europe (6)	16.6%	16.2%	15.0%
Lifeco Corporate	(2.0)%	(2.3)%	(4.3)%
Total Lifeco Adjusted Net Earnings Basis (3) (4) (5) (6)	14.3%	14.7%	13.4%

(1) ROE is the calculation of net earnings divided by the average common shareholders' equity over the trailing four quarters.

(2) Adjusted ROE (a non-IFRS financial measure) is the calculation of adjusted net earnings divided by the average common shareholders' equity over the trailing four quarters.

(3) Canada adjusted net earnings excludes $19 million related to the impact of U.S. tax reform in the fourth quarter of 2017. The second quarter of 2017 excludes restructuring costs of $126 million.

(4) U.S. Financial Services adjusted net earnings excludes the positive impact of U.S. tax reform of $197 million in the fourth quarter of 2017. The first quarter of 2017 excludes restructuring costs of $11 million.

(5) U.S. Asset Management (Putnam) adjusted net earnings excludes the impact of a net charge on the sale of an equity investment of $122 million and the impact of U.S. tax reform of $448 million in the fourth quarter of 2017.

(6) Europe adjusted net earnings for the third quarter of 2018 excludes restructuring costs of $56 million related to the Insurance and Annuities business unit ($4 million in the fourth quarter of 2017, $1 million in the third quarter of 2017 and $1 million in the second quarter of 2017). Adjusted net earnings for the fourth quarter of 2017 also excludes the positive impact of U.S. tax reform of $54 million.

The Company reported ROE based on net earnings of 14.0% at December 31, 2018, compared to 10.9% at December 31, 2017. Lifeco's net earnings for the second quarter of 2018 included a net positive impact of $60 million, arising from refinancing in the U.S. segment completed in the quarter, which increased the December 31, 2018 ROE by 0.3% (September 30, 2018 ROE by 0.3%). Lifeco's net earnings for the third quarter of 2017 included a provision of $175 million related to the impact of 2017 Atlantic hurricane activity, which reduced the December 31, 2017 ROE by 0.9%.

The Company reported ROE based on adjusted net earnings of 14.3% at December 31, 2018, compared to 13.4% at December 31, 2017. Adjusted net earnings exclude the impact of U.S. tax reform, the net charge on the sale of an equity investment and restructuring costs.

Ratings

The Company's financial leverage ratio has been maintained at a level consistent with credit rating agencies' targets for highly rated entities and provides the Company with financial flexibility to invest in organic growth and acquisition strategies.

Lifeco maintains ratings from five independent ratings companies. Credit ratings are intended to provide investors with an independent measure of the credit quality of the securities of a corporation and are indicators of the likelihood of payment and the capacity of a corporation to meet its obligations in accordance with the terms of each obligation. In 2018, the credit ratings for Lifeco and its major operating subsidiaries were unchanged (set out in table below). The Company continued to receive strong ratings relative to its North American peer group resulting from its conservative risk profile, stable net earnings and consistent dividend track record. These ratings are not a recommendation to buy, sell or hold the securities of the Company or its subsidiaries and do not address market price or other factors that might determine suitability of a specific security for a particular investor. The ratings also may not reflect the potential impact of all risks on the value of securities and are subject to revision or withdrawal at any time by the rating agency.

Lifeco's operating companies are assigned a group rating from each rating agency. This group rating is predominantly supported by the Company's leading position in the Canadian insurance market and competitive positions in the U.S. and European markets. Great-West Life, London Life and Canada Life have common management, governance and strategy, as well as an integrated business platform. Each operating company benefits from the strong implicit financial support and collective ownership by Lifeco. There were no changes to the Company's group credit ratings in 2018.

Rating agency	Measurement	Lifeco	Great-West Life	London Life	Canada Life	Irish Life	Great-West Life & Annuity Insurance Company
A.M. Best Company	Financial Strength		A+	A+	A+		A+
DBRS Limited	Issuer Rating	A (high)	AA				
	Financial Strength		AA	AA	AA		NR
	Senior Debt	A (high)					
	Subordinated Debt				AA (low)		
Fitch Ratings	Insurer Financial Strength		AA	AA	AA	AA	AA
	Senior Debt	A					
	Subordinated Debt				A+		
Moody's Investors Service	Insurance Financial Strength		Aa3	Aa3	Aa3		Aa3
Standard & Poor's Ratings Services	Insurer Financial Strength		AA	AA	AA		AA
	Senior Debt	A+					
	Subordinated Debt				AA-		

Following Lifeco's announcement on January 24, 2019 that its subsidiary, Great-West Life & Annuity Insurance Company (GWL&A) had reached an agreement to sell, via reinsurance, substantially all of its individual life insurance and annuity business, Moody's Investors Service issued a news release announcing that it has placed the insurance financial strength (IFS) ratings of GWL&A and its New York subsidiary on review for downgrade. The A3 issuer rating of GWLA's US holding company, GWL&A Financial, Inc., and the Baa1 (hyb) senior debt rating of debentures issued by Great-West Life & Annuity Insurance Capital, LP, were also placed on review for downgrade.

SEGMENTED OPERATING RESULTS

The consolidated operating results of Lifeco, including the comparative figures, are presented on an IFRS basis after capital allocation. Consolidated operating results for Lifeco comprise the net earnings of Great-West Life and its operating subsidiaries, London Life and Canada Life; Great-West Financial and Putnam; together with Lifeco's Corporate results.

For reporting purposes, the consolidated operating results are grouped into four reportable segments – Canada, United States, Europe and Lifeco Corporate – reflecting geographic lines as well as the management and corporate structure of the companies.

CANADA

The Canada segment of Lifeco includes the operating results of the Canadian businesses operated by Great-West Life, London Life and Canada Life, together with an allocation of a portion of Lifeco's corporate results. There are two primary business units included in this segment. Through the Individual Customer business unit, the Company provides life, disability and critical illness insurance products as well as wealth savings and income products to individual clients. Through the Group Customer business unit, the Company provides life, accidental death and dismemberment, critical illness, health and dental protection, creditor insurance as well as accumulation and annuity products and other specialty products to group clients in Canada.

BUSINESS PROFILE

INDIVIDUAL CUSTOMER

Individual Customer comprises both insurance and wealth management product lines sold to individual customers.

Individual insurance includes individual life, disability and critical illness insurance products and services. Individual wealth management includes individual wealth savings and income products and services. The Company is a leader in Canada for all insurance and wealth management products and services and utilizes diverse, complementary distribution channels: Freedom 55 Financial™ (Freedom), Wealth and Insurance Solutions Enterprise (WISE), managing general agencies (MGAs) and national accounts, including IG Wealth Management, a member of the Power Financial Corporation group of companies. Through Financial Horizons Group, the Company participates in the MGA channel, distributing products from across the insurance industry.

The individual lines of business access the various distribution channels through distinct product labels offered by Great-West Life, London Life, Canada Life and Quadrus. By offering this broad suite of products and services through multiple distribution channels, the Company is able to provide advice and product solutions to meet the needs of Canadians at all phases of their lives.

GROUP CUSTOMER

Group Customer includes group life and health benefits, group creditor, and group retirement and investment product lines.

Through its group life and health benefit product lines, the Company offers effective benefit solutions for small, medium and large plan sponsors. The Company offers a wide range of traditional group products and services including life, accidental death and dismemberment, critical illness, disability, health and dental as well as specialty products. In addition, specialty product development has been a focus over the past several years as the Company seeks to provide customized solutions to increasingly unique customer needs. Products to address the needs of mental health in the workplace, high cost medications, optional products purchased by plan members directly and wellness programs are examples of this. In the fourth quarter of 2018, Great-West Life launched Dialogue™ on a national basis, which is a service that facilitates an interaction, through web or mobile application, between a plan member and a team of medical professionals who can diagnose a number of conditions and provide medical advice in an efficient and effective manner.

The Company's creditor business, conducted through its Canada Life subsidiary, offers creditor and affinity group products to large financial institutions, credit card companies, alumni and association groups. Canada Life is a leader in the creditor insurance business in Canada. Effective November 16, 2018, the Company ceased sales on Canada Life's Affinity Sponsored Direct Marketing product line. Industry sales growth in this channel had begun to plateau, making the distribution of products through these channels less viable.

Group retirement and investment product lines include group Registered Retirement Savings Plans (RRSP), Tax-Free Savings Accounts (TFSA), group retirement income products, and institutional investment services. The Company is focused on innovation within its savings and investment product lines, and in 2019 will be focused on nationalizing the student debt savings program after a successful pilot in 2018.

Through the Company's extensive network of Group sales offices located across the country, it distributes its products through brokers, consultants and financial security advisors.

Market Overview

Products and Services

Individual Customer

The Company provides an array of individual insurance and individual wealth management products that are distributed through multiple sales channels. Products are marketed under the Great-West Life, London Life, Canada Life and Quadrus brands.

Market Position
- Manages largest portfolio of life insurance in Canada as measured by premium (1)
- Pre-eminent provider of individual disability and critical illness insurance with 26% market share of in-force premium (2)
- 36% market share of individual segregated funds (2)

Products and Services

Individual Life Insurance
- Term Life
- Universal Life
- Participating Life

Living Benefits
- Disability
- Critical Illness

Individual Wealth Management
- Savings plans
  - RRSPs
  - Non-registered savings programs
  - TFSAs

  Invested in:
  - Segregated funds
  - Mutual funds
  - Guaranteed investment options
- Retirement Income Plans
  - Segregated funds with GMWB rider
  - Retirement income funds
  - Life income funds
  - Payout annuities
  - Deferred annuities
- Residential mortgages
- Banking products

Distribution (3)

Wealth and Insurance Solutions Enterprise
- 2,306 financial security advisors

Freedom 55 Financial™
- 2,375 financial security advisors

Affiliated Partnerships
- 7,334 independent brokers associated with 33 MGAs
- 1,721 advisors associated with 14 national accounts
- 2,030 IG Wealth Management consultants who actively sell Canada Life products
- 118 direct brokers and producer groups

Financial Horizons Group
- 6,000 independent brokers selling products from across the insurance industry, including Canada Life

Quadrus Investment Services Ltd.
(also included in WISE & Freedom advisor counts):
- 4,515 investment representatives

(1) As at December 31, 2017

(2) As at September 30, 2018

(3) WISE & Freedom includes all contracted advisors. Affiliated Partnerships and Financial Horizons Group include advisors who placed new business in 2018.

Group Customer

The Company provides an array of life, health and creditor insurance products that are distributed primarily through Group sales offices across the country.

Market Position
- Employee benefits to over 30,000 plan sponsors (1)
- 21% market share for employee benefit plans (1)
- Leading market share with 39% for creditor products (1) with coverage provided to over 7.3 million plan members (3)
- 20% market share of group capital accumulation plans (1)
- 18% new sales market share of single premium group annuities (2)

Products and Services

Group Life and Health Benefits
- Life
- Disability
- Critical illness
- Accidental death & dismemberment
- Dental
- Expatriate coverage
- Extended health care

Group Creditor
- Life
- Disability
- Job loss
- Critical illness

Group Retirement & Investment Services
- Group Capital Accumulation Plans including:
  - Defined contribution pension plans
  - Group RRSPs & TFSAs
  - Deferred profit sharing plans
  - Non-registered savings programs

  Invested in:
  - Segregated funds
  - Guaranteed investment options
  - Single company stock
- Retirement Income Plans
  - Payout annuities
  - Deferred annuities
  - Retirement income funds
  - Life income funds
- Investment management services only plans

Invested in:
  - Segregated funds
  - Guaranteed investment options
  - Securities

Specialty Products and Services
- Student debt savings incentive products
- Dialogue™
- Best Doctors™
- Contact
- Individual Health
- Collage HR Solutions

Distribution
- Group Life and Health and Group Retirement and Investment Services are distributed through brokers, consultants, and financial security advisors. Sales and service support are provided by an integrated team of over 600 employees, located in 27 offices across the country, including 134 account executives.
- Group Creditor products and services are distributed primarily though large financial institutions and serviced through a dedicated sales and service organization.

(1) As at December 31, 2017

(2) As at September 30, 2018

(3) As at December 31, 2018

Competitive Conditions

Individual Customer

The individual insurance marketplace is highly competitive. Competition focuses on service, technology, product features, price and financial strength, as indicated by ratings issued by nationally recognized agencies. The Company's broad spectrum of distribution associates, including exclusive and independent channels, provide important strategic advantages within the Canadian market.

The individual wealth management marketplace is also very competitive. The Company's main competitors include mutual fund companies, insurance companies, banks and investment advisors as well as other service and professional organizations. New FinTech competitors have entered the marketplace leading to increased competition. Competition focuses on ease of doing business through technology, service, variety of investment options, investment performance, product features, price (fees) and financial strength, as indicated by ratings issued by nationally recognized agencies. Individual wealth management's broad spectrum of distribution associates, including exclusive and independent channels, provide important strategic advantages within the Canadian market.

Group Customer

The group life and health benefits market in Canada is highly competitive. There are three large group insurance carriers with significant market positions, a number of smaller companies operating nationally and several regional and niche competitors. The Company has a significant market share of 21%, which is supported by an extensive distribution network who have access to a wide range of products and services. This strong market share position is a distinct advantage for competing successfully in the Canadian group insurance market.

The group capital accumulation plan market is also very competitive. Three major insurance companies hold a significant market share while several smaller insurance companies have an important market presence.

The pension risk transfer business continues to grow in the Canadian marketplace as more companies with defined benefit pension plans (open or closed) look to transfer the investment and longevity risk to insurance companies. Helping the market with the capacity to meet this demand, existing companies have increased their presence in the market place, including major independent and bank-owned insurance companies with strong balance sheets and new entrants.

Selected consolidated financial information – Canada

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (1)	**Dec. 31 2018**	Dec. 31 2017 (1)
Premiums and deposits (1)	**$ 6,638**	$ 6,269	$ 6,835	**$ 26,298**	$ 26,500
Sales	**3,447**	2,877	3,772	**13,186**	13,608
Fee and other income (1)	**428**	437	436	**1,736**	1,684
Net earnings – common shareholders	**310**	315	338	**1,275**	1,074
Adjusted net earnings (2)	**310**	315	357	**1,275**	1,219
Total assets	**$ 160,906**	$ 164,665	$ 161,760		
Proprietary mutual funds and institutional net assets	**6,214**	7,216	6,810		
Total assets under management	**167,120**	171,881	168,570		
Other assets under administration	**13,615**	13,773	11,580		
Total assets under administration	**$ 180,735**	$ 185,654	$ 180,150		

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

(2) Adjusted net earnings attributable to common shareholders is a non-IFRS financial measure of earnings performance. Adjustments are detailed in footnote 6 to the Selected Consolidated Financial Information table of this MD&A.

Net earnings – common shareholders

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Individual Customer	**$ 171**	$ 165	$ 162	**$ 685**	$ 589
Group Customer	**144**	150	193	**630**	641
Corporate	**(5)**	–	(17)	**(40)**	(156)
Net earnings – common shareholders	**$ 310**	$ 315	$ 338	**$ 1,275**	$ 1,074
Adjustments:					
Restructuring costs	**–**	–	–	**–**	126
U.S. tax reform impact	**–**	–	19	**–**	19
Adjusted net earnings – common shareholders (1)	**$ 310**	$ 315	$ 357	**$ 1,275**	$ 1,219

(1) Adjusted net earnings attributable to common shareholders is a non-IFRS financial measure of earnings performance. Adjustments are detailed in footnote 6 to the Selected Consolidated Financial Information table of this MD&A.

2018 Developments

- Through its business transformation program, the Company achieved $209 million of pre-tax annualized expense reductions, exceeding the target of $200 million. The $209 million of pre-tax annualized expense reductions are approximately $165 million related to the common shareholders' account and $44 million related to the participating account, compared to targets of $160 million and $40 million, respectively. The Company will continue to invest in innovative technologies, focus on strategies to enhance growth and its competitive position and identify ways to further simplify its products, marketing, operations and structure.
- During 2018, the Company increased strategic and business development expenses due to investment in technology and innovation to enhance the customer experience:
  - During the third quarter of 2018, Freedom launched Simple Protect, a new streamlined web-based application for simple term life. Qualifying term policies are now being issued in a streamlined fashion. In the fourth quarter of 2018, it was rolled out to WISE and the rollout will continue to other channels in subsequent quarters.
  - During the fourth quarter of 2018, the Company relaunched its GroupNet for Plan Members website on a new digital platform allowing for personalization specific to each plan member.
  - During the fourth quarter of 2018, the Company launched a fully bilingual digital health platform, Dialogue™, on a national basis. Dialogue™ is a service that facilitates an interaction, through web or mobile application, between a plan member and a team of medical professionals who provide medical advice in an efficient and effective manner.
  - During the fourth quarter of 2018, Group Customer's first digital lab successfully deployed a new enrollment function with full end-to-end transactions completed, on a limited launch basis. This digital lab has provided a new development capability that the Company intends to continue to utilize for its focus, speed to market and its involvement of the customer in the development process.
- Great-West Life Realty Advisors Inc. (GWLRA), a wholly owned subsidiary of the Company, built on its long-term strategy to establish a global investment platform to serve its investor clients with two acquisitions during the year.
  - On February 2, 2018, GWLRA acquired the business of EverWest Real Estate Partners, a U.S. based real estate advisor. While the revenue and net earnings from EverWest are not material, $2.1 billion of real estate assets have been added to the Canada segment assets under administration portfolio.
  - Subsequent to December 31, 2018, on January 31, 2019, GWLRA completed its acquisition of Guggenheim Real Estate LLC (GRE), the real estate private equity platform of Guggenheim Investments. The transaction is not expected to have a material impact on the Company's financial results.
  - These acquisitions provide both scale and organic growth opportunities to the Company.
- The Company continues to build on its growth strategy in the managing general agency (MGA) market with the purchase of Abex Central by Financial Horizons Group, the Company's wholly owned MGA. The acquisition closed in the first quarter of 2018, and is another step in the strategic growth of Financial Horizons Group as the leading MGA and financial services company in Canada.
- In October 2018, the Company announced Indigo Books & Music Inc. (Indigo) as the first national employer to pilot the Company's student debt savings program – the first of its kind in Canada. Through this program, when an employee makes a payment on their Canada or provincial government student loan, Indigo will make a matching contribution to their retirement savings account within Indigo's group retirement and savings plan (up to a maximum).
- During the fourth quarter of 2018, London Life and Quadrus Investment Services Ltd., a subsidiary of the Company, launched a goals-based asset management program and a new mutual fund family. Constellation Managed Portfolios (Constellation) is a program to help Freedom advisors align their customers' investments with their financial priorities through a customer-focused digital tool. Constellation uses the recently launched London Life Pathways funds, which focus on pure asset class mandates, to help advisors effectively meet their customers' needs. Pathways is also available through WISE advisors.
- On December 19, 2018, the Company announced the launch of the Market Access Program (MAP) to its WISE advisors. MAP leverages Financial Horizons Group allowing advisors to consolidate their business with all insurance companies through one compensation and recognition contract.
- GWL Realty Advisors ranked second in Canada and fourth globally in the diversified category in the Global Real Estate Sustainability Benchmark (GRESB) for 2018. GWL Realty Advisors earned a Green Star ranking for the fourth consecutive year and received its second consecutive GRESB '5 star' rating.
- The Company earned an A- (leadership) rating on CDP's 2018 Climate Change Questionnaire, which identifies the global leaders in the management of carbon, climate change risks, and low carbon opportunities. The Company once again achieved the highest rating among Canadian insurance companies and was among the top seven Canadian companies.

Business Units – Canada

Individual Customer

Operating Results

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Premiums and deposits	**$ 2,862**	$ 2,419	$ 2,809	**$ 10,461**	$ 10,880
Sales	**2,479**	2,030	2,537	**9,287**	9,723
Fee and other income	**242**	253	255	**997**	949
Net earnings	**171**	165	162	**685**	589

Premiums and deposits

Premiums and deposits for the fourth quarter of 2018 of $2.9 billion were comparable to the same quarter last year, as higher participating life insurance premiums were offset by a decrease in segregated fund deposits.

For the twelve months ended December 31, 2018, premiums and deposits decreased by $0.4 billion to $10.5 billion compared to the same period last year, primarily due to a decrease in segregated fund deposits, partially offset by an increase in mutual fund deposits and participating life insurance premiums.

Premiums and deposits for the fourth quarter of 2018 increased by $0.4 billion compared to the previous quarter, primarily due to an increase in participating life insurance premiums and mutual fund deposits.

Sales

Sales for the fourth quarter of 2018 of $2.5 billion were comparable to the same quarter last year, reflecting higher third party mutual fund and participating life insurance sales, offset by a decrease in segregated fund sales.

For the twelve months ended December 31, 2018, sales decreased by $0.4 billion to $9.3 billion compared to the same period last year, primarily due to a decrease in wealth sales of $0.3 billion and a decrease in insurance sales of $0.1 billion. The decrease in wealth sales was primarily due to a decrease in segregated fund sales, partially offset by higher third party mutual fund sales. The decrease in insurance sales was primarily due to higher insurance sales in the first quarter of 2017 driven by the transition rules associated with the new tax exempt legislation effective January 2017.

Sales for the fourth quarter of 2018 increased by $0.4 billion compared to the previous quarter, primarily due to an increase in segregated fund and third party mutual fund sales.

For the individual wealth investment fund business, net cash outflows for the fourth quarter of 2018 were $216 million compared to $83 million for the same quarter last year and $259 million for the previous quarter. Net cash outflows for the twelve months ended December 31, 2018 were $789 million compared to net cash inflows of $299 million for the same period last year.

Assets under administration – Individual Wealth

	December 31	
	2018	2017
Assets under management		
Risk-based products	**$ 5,002**	$ 5,252
Segregated funds	**30,925**	33,356
Quadrus group of funds	**6,037**	6,211
Total assets under management	**$41,964**	$ 44,819
Other assets under administration [(1)]	**$ 8,397**	$ 8,283
Total assets under administration – Individual Wealth	**$50,361**	$ 53,102

(1) Includes third party mutual funds distributed by Quadrus

Fee and other income

Fee and other income for the fourth quarter of 2018 decreased by $13 million to $242 million compared to the same quarter last year, primarily due to lower average assets under administration driven by lower average equity market levels in period as well as lower margins.

For the twelve months ended December 31, 2018, fee and other income increased by $48 million to $997 million compared to the same period last year. The increase was primarily due to growth in other income related to Financial Horizons Group, which was acquired part way through the third quarter of 2017.

Fee and other income for the fourth quarter of 2018 decreased by $11 million compared to the previous quarter, primarily due to lower average assets under administration driven by lower average equity market levels.

Net earnings

Net earnings for the fourth quarter of 2018 increased by $9 million to $171 million compared to the same quarter last year. The increase was primarily due to higher contributions from insurance contract liability basis changes, partially offset by lower net fee income and less favourable impact of new business.

For the twelve months ended December 31, 2018, net earnings increased by $96 million to $685 million compared to the same period last year. The increase was primarily due to higher contributions from insurance contract liability basis changes and more favourable morbidity and policyholder behaviour experience. The increase was partially offset by lower contributions from investment experience, lower net fee income, less favourable impact of new business and less favourable mortality experience.

Net earnings for the fourth quarter of 2018 increased by $6 million compared to the previous quarter. The increase was primarily due to higher contributions from investment experience and more favourable mortality and morbidity experience, partially offset by lower net fee income and less favourable policyholder behaviour experience.

For the fourth quarter of 2018, the net loss attributable to the participating account was $19 million compared to net earnings of $25 million for the same quarter last year, primarily due to less favourable impact of new business, lower contributions from insurance contract liability basis changes and expenses arising out of the conclusion of a legal matter.

For the twelve months ended December 31, 2018, the net loss attributable to the participating account was $21 million compared to net earnings of $42 million for the same period last year. Included in the 2017 year-to-date results were $32 million of restructuring costs related to the Canadian business transformation. Excluding these restructuring costs, the adjusted net loss increased by $95 million, primarily due to less favourable impact of new business and expenses arising out of the conclusion of a legal matter.

The net loss attributable to the participating account for the fourth quarter of 2018 of $19 million was comparable to the previous quarter.

Outlook – Individual Customer

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

The Individual Customer business unit delivered solid results in 2018. The Company's reputation for strength and stability, combined with prudent business practices as well as the depth and breadth of its distribution channels positions the Company well for 2019 and beyond.

In 2019, Individual Customer will continue to advance on strategies to position for growth. The Company will further establish the value propositions for advisors in all channels, providing them with strategies and tools for helping customers focus on achieving long-term financial security regardless of life stage and market fluctuations. This commitment to advice is beneficial to strong customer retention as well as helping advisors attract new customers to the Company. A key distribution strategy will be to maximize the use of common tools, processes and support, while tailoring support to specific segments of advisors where appropriate.

The Company will continue to competitively develop, price and market its comprehensive range of individual insurance and individual wealth management products while maintaining its focus on sales and service support to customers and advisors in all channels.

Operational expense management continues to be critically important to delivering strong financial results. This will be achieved through disciplined expense controls and effective development and implementation of strategic investments. Management has identified a number of areas of focus for these investments to facilitate the objective of organic growth, including continuing to invest in digital solutions to support advisors and customers and addressing its legacy of administration systems and processes to unlock the potential for future growth.

Group Customer

Operating Results

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (1)	**Dec. 31 2018**	Dec. 31 2017 (1)
Premiums and deposits (1)	**$ 3,776**	$ 3,850	$ 4,026	**$ 15,837**	$ 15,620
Sales	**968**	847	1,235	**3,899**	3,885
Fee and other income (1)	**172**	173	169	**685**	655
Net earnings	**144**	150	193	**630**	641

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

Premiums and deposits

Premiums and deposits for the fourth quarter of 2018 decreased by $0.3 billion to $3.8 billion compared to the same quarter last year, primarily due to lower segregated fund deposits, partially offset by higher administrative services only (ASO) deposits for group insurance.

For the twelve months ended December 31, 2018, premiums and deposits increased by $0.2 billion to $15.8 billion compared to the same period last year, primarily due to higher ASO deposits for group insurance.

Premiums and deposits for the fourth quarter of 2018 decreased by $0.1 billion compared to the previous quarter, primarily due to lower premiums and deposits related to single premium group annuities (SPGAs) and lower segregated fund deposits, partially offset by higher group insurance ASO deposits.

Sales

Sales for the fourth quarter of 2018 decreased by $0.3 billion to $1.0 billion compared to the same quarter last year, primarily due to lower sales of segregated fund products.

For the twelve months ended December 31, 2018, sales of $3.9 billion were comparable to the same period last year, as higher sales for group insurance driven by the large case market were mostly offset lower sales of SPGAs.

Sales for the fourth quarter of 2018 increased by $0.1 billion compared to the previous quarter, primarily due to higher segregated fund sales.

For the group wealth segregated fund business, net cash outflows for the fourth quarter of 2018 were $73 million, compared to net cash inflows of $214 million for the same quarter last year and net cash outflows of $69 million for the previous quarter. For the twelve months ended December 31, 2018, net cash outflows were $50 million compared to net cash inflows of $780 million for the same period last year.

Assets under administration – Group Retirement & Investment Services

	December 31	
	2018	2017
Assets under management		
Risk-based products	**$ 8,207**	$ 7,978
Segregated funds	**45,708**	47,043
Institutional assets	**177**	599
Total assets under management	**$54,092**	$ 55,620
Other assets under administration (1)	**$ 400**	$ 506
Total assets under administration – Group Retirement & Investment Services	**$54,492**	$ 56,126

(1) Includes mutual funds distributed by Quadrus, stock purchase plans administered by London Life and portfolio assets managed by GLC Asset Management Group.

Fee and other income

Fee and other income for the fourth quarter of 2018 of $172 million was comparable to the same quarter last year and to the previous quarter.

For the twelve months ended December 31, 2018, fee and other income increased by $30 million to $685 million compared to the same period last year, primarily due to higher average assets under administration driven by higher average equity market levels as well as higher ASO fee income driven by higher sales.

Net earnings

Net earnings for the fourth quarter of 2018 decreased by $49 million to $144 million compared to the same quarter last year. The decrease was primarily due to lower contributions from investment experience and insurance contract liability basis changes as well as higher expenses related to strategic investments.

For the twelve months ended December 31, 2018, net earnings decreased by $11 million to $630 million compared to the same period last year, primarily due to lower contributions from investment experience and insurance contract liability basis changes as well as higher expenses related to strategic investments. The decrease was partially offset by more favourable morbidity and mortality experience.

Net earnings for the fourth quarter of 2018 decreased by $6 million compared to the previous quarter, primarily due to lower contributions from insurance contract liability basis changes as well as higher expenses related to strategic investments. The decrease was partially offset by more favourable mortality and morbidity experience.

Outlook – Group Customer

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

During 2018, the Company maintained its strong competitive position in the Canadian group market with leading or strong market share in all case size, regional and benefit market segments. The Company implemented its largest single sale in Group Life & Health in the Ontario education sector and set a new sales premium record for the third consecutive year in the small group product Selectpac. The Company believes that this market share position, together with its distribution capacity, will facilitate continued growth in net premium income. In particular, through effective investment in digital technologies and innovative benefit solutions, the Company expects to continue to enhance its competitive position in the marketplace.

Recently, the Company announced a number of new initiatives to grow market share and increase relevance to Canadian group plans and their covered members including:

- The Company expects to further expand on its leading Health Case Management program through a planned pilot with Best Doctors™ in 2019 to enhance patient diagnosis and treatment. This service is expected to improve health outcomes for plan members, while improving the cost effectiveness of the benefits program for plan sponsors.
- Following the successful re-launch of GroupNet for Plan Members in the fourth quarter of 2018, the Company is continuing the process of upgrading its digital platforms. During 2019, the Group Savings platform for members will be re-launched and will integrate the Company's GroupNet for Plan Members platform and consolidate functionality from the Wayfinder, SmartpathNow, and GRS Access platforms. This relaunching of Group Savings will provide new products and service opportunities for the Company in the future.
- Data and data analytics capabilities are providing new means to better serve the Company's customers. During 2019, the Company will be deploying a personalization engine that will help plan members better understand and use their benefits program by using notifications sent to plan members.
- The Company will be piloting its first "chatbot" and digital agent technologies through the Company's customer contact centre during 2019.

The Company's investments in technology and innovation are expected to improve processes and provide faster service, while empowering customers to better achieve financial, physical and mental well-being.

The Company continues to see significant changes in the distribution landscape through the aggregation of regional and national advisor practices. This developing aggregation will challenge the industry to seek efficient ways of working within this new distribution landscape.

Canada Corporate

Canada Corporate consists of items not associated directly with or allocated to the Canadian business units.

For the fourth quarter of 2018, Canada Corporate had a net loss of $5 million compared to $17 million for the same quarter last year. Included in results for the fourth quarter of 2017 was a net charge of $19 million related to the impact of U.S. tax reform. Excluding this item, the adjusted net loss for the fourth quarter of 2018 increased by $7 million, primarily due to the less favourable impact of changes to certain income tax estimates and expenses arising out of the conclusion of a legal matter, partially offset by higher net investment income.

The net loss for the twelve months ended December 31, 2018 was $40 million compared to $156 million for the same period last year. Included in the 2017 year-to-date results was the impact of restructuring costs of $126 million related to the Canada business transformation and the impact of U.S. tax reform discussed for the in-quarter results. Excluding these items, the adjusted net loss increased by $29 million, primarily due to the less favourable impact of changes to certain income tax estimates and lower net fee income, which included fees related to the transition of assets from GWL Realty Advisors to bcIMC, and expenses arising out of the conclusion of a legal matter, partially offset by higher mark-to-market gains on investment properties.

In the fourth quarter of 2018, the net loss was $5 million compared to nil in the previous quarter, primarily due to expenses arising out of the conclusion of a legal matter, partially offset by higher net investment income.

United States

The United States operating results for Lifeco include the results of Great-West Life & Annuity Insurance Company (Great-West Financial), Putnam Investments, LLC (Putnam) and the results of the insurance businesses in the United States branches of Great-West Life and Canada Life, together with an allocation of a portion of Lifeco's corporate results.

Through its Financial Services business unit, and specifically the Empower Retirement brand, the Company provides an array of financial security products, including employer-sponsored defined contribution plans, administrative and recordkeeping services, individual retirement accounts, fund management as well as investment and advisory services. The Company also provides life insurance, annuity and executive benefits products through its Individual Markets operations. On January 24, 2019, Great-West Financial reached an agreement to sell, via reinsurance, substantially all of its individual life insurance and annuity business to Protective Life. The transaction is expected to close in the first half of 2019 and will allow Great-West Financial to focus on the defined contribution retirement market and its Empower Retirement brand.

Through its Asset Management business unit, the Company provides investment management, certain administrative functions, distribution and related services, through a broad range of investment products.

Translation of Foreign Currency

Foreign currency assets and liabilities are translated into Canadian dollars at the market rate at the end of the financial period. All income and expense items are translated at an average rate for the period.

Currency translation impact is a non-IFRS financial measure that highlights the impact of changes in currency translation rates on IFRS results. This measure provides useful information as it facilitates the comparability of results between periods. Refer to the Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

Business Profile

Financial Services

Great-West Financial provides an array of financial security products, including employer-sponsored defined contribution plans, individual retirement accounts, life insurance, annuity products and executive benefits products. Under the Empower Retirement brand name, Great-West Financial offers employer-sponsored defined contribution plans, individual retirement accounts, enrolment services, communication materials, investment options and education services. The Great-West Investments business unit offers fund management, investment and advisory services. Through its FASCore subsidiary, which is marketed under the Empower Institutional brand, Great-West Financial offers private label recordkeeping and administrative services for other providers of defined contribution plans. Through relationships with government plan sponsors, the Company is the largest provider of services to state defined contribution plans, with 21 recordkeeping and one investment only state clients.

Asset Management

Putnam provides investment management, certain administrative functions and distribution services. Putnam offers a broad range of investment products, including equity, fixed-income, absolute return and alternative strategies, through Putnam Funds, Putnam World Trust Funds and institutional portfolios. Revenue is derived from the value and composition of assets under management and performance fees as well as service and distribution fees. Accordingly, fluctuations in the financial markets and changes in the composition of assets or accounts affect revenues and results of operations.

Market Overview

Products and Services

The Company provides a focused product offering that is distributed through a variety of channels.

Financial Services

Market Position

- Second largest defined contribution recordkeeper in the country (4) by participants providing services for 8.8 million participant accounts and 38,627 plans (1)
- 24% market share in state and local government deferred compensation plans, based on number of participant accounts (2)
- 23% market share of individual life insurance sold through the retail bank channel (3)
- 8% market share of executive benefits markets life insurance purchased by financial institutions (3)
- Great-West Lifetime Funds are the 13th largest target date fund offering in the U.S. (1)

Products and Services

- Employer-sponsored defined contribution plans, enrollment services, communication materials, investment options and education services
- Administrative and recordkeeping services for financial institutions and employer-sponsored defined contribution plans and associated defined benefit plans
- Fund management, investment and advisory services
- Individual retirement accounts (IRAs), individual term and single premium life insurance and individual annuity products
- Executive benefits markets life insurance products

Distribution

- Retirement services products distributed to plan sponsors through brokers, consultants, advisors, third-party administrators and banks
- FASCore recordkeeping and administrative services distributed through institutional clients
- Individual life and annuity products distributed through wholesale and retail sales force, banks, broker dealers and investment advisors
- IRAs available to individuals through the Retirement Solutions Group
- Executive benefits markets life insurance products distributed through wholesalers and specialized consultants

(1) As at December 31, 2018

(2) As at September 30, 2018

(3) Market share based on annualized Q1 - Q3 2018 sales data

(4) As at April 30, 2018

Asset Management

Market Position

- A global asset manager with assets under management of US$160.2 billion (1)
- Global distribution includes sales teams that are focused on major institutional markets in the U.S., Europe, the Middle East, Asia and Australia and through a long-standing strategic distribution relationship in Japan

Products and Services

Investment Management Products & Services

- Individual retail investors – a family of open-end and closed-end mutual funds, college savings plans and variable annuity products
- Institutional investors – defined benefit and defined contribution investment only plans sponsored by corporations, state, municipal and other governmental authorities, university endowment funds, charitable foundations, and collective investment vehicles (both U.S. and non-U.S.)
- Investment services for defined contribution investment only plans
- Alternative investment products across the fixed-income, quantitative and equity groups

Administrative Services

- Transfer agency, underwriting, distribution, shareholder services, trustee and other fiduciary services

Distribution

Individual Retail Investors

- A broad network of distribution relationships with unaffiliated broker dealers, financial planners, registered investment advisors and other financial institutions that distribute the Putnam Funds and defined contribution investment only services to their customers, which, in total, includes approximately 143,000 advisors (1)
- Sub-advisory relationships and Putnam-labeled funds as investment options for insurance companies and non-U.S. residents
- Retail distribution channels are supported by Putnam's sales and relationship management team
- Retirement plan sponsors and participants are supported by Putnam's dedicated defined contribution investment only professionals and through a relationship with Empower Retirement

Institutional Investors

- Supported by Putnam's dedicated account management, product management and client service professionals

(1) As at December 31, 2018

Competitive Conditions

Financial Services

The life insurance, savings and investments marketplace is competitive. The Company's competitors include mutual fund companies, insurance companies, banks, investment advisors and certain service and professional organizations. No one competitor or small number of competitors is dominant. Competition focuses on name recognition, service, technology, cost, variety of investment options, investment performance, product features, price and financial strength as indicated by ratings issued by nationally recognized agencies.

Asset Management

The investment management business is competitive. Putnam competes with other providers of investment products and services, primarily based on the range of investment products offered, investment performance, distribution, scope and quality of shareholder and other services as well as general reputation in the marketplace. Putnam's investment management business is also influenced by general securities market conditions, government regulations, global economic conditions as well as advertising and sales promotional efforts. Putnam competes with other mutual fund firms and institutional asset managers that offer investment products similar to Putnam as well as products that Putnam does not offer. Putnam also competes with a number of mutual fund sponsors that offer their funds directly to the public. Conversely, Putnam offers its funds only through intermediaries.

Selected consolidated financial information – United States

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 [1]	**Dec. 31 2018 [2]**	Dec. 31 2017 [1] [3]
Premiums and deposits	**$ 20,588**	$ 17,358	$ 14,150	**$ 72,475**	$ 58,449
Sales	**32,080**	24,284	19,162	**105,948**	81,621
Fee and other income [1]	**644**	673	635	**2,603**	2,538
Net earnings – common shareholders	**55**	113	(298)	**388**	(50)
Net earnings (US$) – common shareholders [2]	**41**	87	(234)	**292**	(42)
Adjusted net earnings – common shareholders [3]	**55**	113	75	**388**	334
Adjusted net earnings (US$) – common shareholders [2] [3]	**41**	87	60	**292**	260
Total assets	**$ 85,941**	$ 83,888	$ 84,063		
Proprietary mutual funds and institutional net assets	**235,075**	246,151	232,623		
Total assets under management	**321,016**	330,039	316,686		
Other assets under administration	**630,881**	659,602	597,596		
Total assets under administration	**$ 951,897**	$ 989,641	$ 914,282		

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

(2) Net earnings (US$) – common shareholders and Adjusted net earnings – common shareholders (US$) in the second quarter of 2018 did not include $9 million of net foreign currency exchange gains as they did not have a US$ equivalent. These amounts were only included in Canadian dollar net earnings.

(3) Adjusted net earnings attributable to common shareholders is a non-IFRS financial measure of earnings performance. Adjustments are detailed in footnote 6 to the Selected Consolidated Financial Information table of this MD&A.

Net earnings – common shareholders

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Financial Services	**$ 84**	$ 121	$ 80	**$ 397**	$ 357
Asset Management	**(29)**	(8)	(5)	**(61)**	(21)
Corporate [1]	**–**	–	(373)	**52**	(386)
Net earnings – common shareholders	**$ 55**	$ 113	$ (298)	**$ 388**	$ (50)
Adjustments					
Restructuring costs	**–**	–	–	**–**	11
Net charge on sale of equity investment	**–**	–	122	**–**	122
U.S. tax reform impact	**–**	–	251	**–**	251
Adjusted net earnings – common shareholders [1]	**$ 55**	$ 113	$ 75	**$ 388**	$ 334
Financial Services (US$)	**$ 63**	$ 93	$ 64	**$ 306**	$ 277
Asset Management (US$)	**(22)**	(6)	(4)	**(47)**	(15)
Corporate (US$) [1]	**–**	–	(294)	**33**	(304)
Net earnings (US$) – common shareholders	**$ 41**	$ 87	$ (234)	**$ 292**	$ (42)
Adjustments					
Restructuring costs (US$)	**–**	–	–	**–**	8
Net charge on sale of equity investment (US$)	**–**	–	96	**–**	96
U.S. tax reform impact (US$)	**–**	–	198	**–**	198
Adjusted net earnings (US$) – common shareholders [1]	**$ 41**	$ 87	$ 60	**$ 292**	$ 260

(1) Adjusted net earnings attributable to common shareholders is a non-IFRS financial measure of earnings performance. Adjustments are detailed in footnote 6 to the Selected Consolidated Financial Information table of this MD&A.

2018 Developments

- On April 18, 2018, the Securities and Exchange Commission (SEC) released its proposal on the best interest standards applicable to brokers and advisors. The Company provided comments to the SEC in August 2018. The Company will monitor any developments or proposed revisions and is preparing to comply with the standards.
- The *Tax Reconciliation Act*, which was signed in December 2017, among other changes, lowered the U.S. corporate federal income tax rate from 35% to 21% effective on January 1, 2018. As a result, net earnings in 2018 reflect net income tax effected at the lower 21% rate. Other provisions of the tax bill did not have a material effect on taxable income in 2018.
- During the second quarter of 2018, the Company issued two tranches of debentures totalling US$800 million and redeemed two tranches of debentures totalling US$699 million. As a result of the financing activity, Canadian dollar net earnings of the Company included foreign exchange net gains of $9 million. The Company also recognized a gain of $51 million (US$39 million) on an interest rate hedge related to one of the tranches of debt that was redeemed. These items have been included in the U.S. Corporate results. Additional details on the debt redemptions and issuances are included in the "Debentures and Other Debt Instruments" section.

Business Units – United States

Financial Services

2018 Developments

- Subsequent to December 31, 2018, on January 24, 2019, the Company announced that its subsidiary, Great-West Financial, has reached an agreement to sell, via reinsurance, substantially all of its individual life insurance and annuity business to Protective Life. The Company estimates that this will result in an after-tax transaction value of approximately $1.6 billion (US$1.2 billion), excluding one-time expenses, but including the ceding commission and a capital release is expected to occur of approximately $530 million (US$400 million). The business to be transferred includes bank-owned and corporate-owned life insurance, single premium life insurance, individual annuities as well as closed block life insurance and annuities, which contributed $138 million (US$108 million) to the Company's net earnings for twelve months ended December 31, 2018. The Company will retain a small block of participating life insurance policies which will be administered by Protective Life following the close of the transaction. The transaction is expected to close in the first half of 2019, subject to regulatory and customary closing conditions. The Company expects to recognize a loss related to this transaction. Post-transaction, the Company will focus on the defined contribution retirement and asset management markets in the U.S.
- Empower Retirement participant accounts have grown to 8.8 million at December 31, 2018 from 8.3 million at December 31, 2017.
- Empower Retirement assets under administration were US$516 billion at December 31, 2018, down from US$530 billion at December 31, 2017.
- In the U.S. retirement market, the PLANSPONSOR 2017 Recordkeeping Survey ranks Empower Retirement in the top 10 based on number of defined contribution participants, number of defined contribution plans and size of defined contribution assets.
- During the fourth quarter of 2018, the Company received the following awards and rankings:
  - In a PLANADVISER Retirement Plan Adviser Survey, Empower Retirement was rated number 1 by retirement professionals in six categories: Best value for price, Best wholesalers, Best fee structure for advisors, Best value-added advisor service, Best overall service for micro plans and Best overall service for small plans.
  - In Newsweek's inaugural list of "America's Best Companies for Customer Service 2019", Empower Retirement is in the top three ranked companies with which to save for retirement by U.S. customers who have used the services.
- In the first quarter of 2018, Empower Retirement introduced a new web-based platform called 'My Total Retirement' for its users which provides a fully integrated advisory solution to retirement.

Operating Results

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (2)	**Dec. 31 2018**	Dec. 31 2017 (2)
Premiums and deposits	**$ 3,105**	$ 3,230	$ 3,134	**$ 12,627**	$ 12,950
Sales (1)	**14,597**	10,156	8,146	**46,100**	36,122
Fee and other income (2)	**359**	371	340	**1,431**	1,345
Net earnings	**84**	121	80	**397**	357
Premiums and deposits (US$)	**$ 2,353**	$ 2,465	$ 2,467	**$ 9,753**	$ 10,003
Sales (US$) (1)	**11,058**	7,753	6,414	**35,578**	27,988
Fee and other income (US$) (2)	**272**	283	268	**1,105**	1,039
Net earnings (US$)	**63**	93	64	**306**	277

(1) For the three and twelve months ended December 31, 2018, sales included US$0.3 billion and US$1.1 billion, respectively, relating to Putnam managed funds sold on the Empower Retirement platform (US$0.4 billion and US$1.8 billion for the three and twelve months ended December 31, 2017 and US$0.3 billion for the three months ended September 30, 2018).

(2) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

Premiums and deposits

Premiums and deposits for the fourth quarter of 2018 decreased by US$0.1 billion to US$2.4 billion compared to the same quarter last year. The decrease was primarily due to lower deposits from existing Empower Retirement participants and lower sales in the executive benefits and retail bank insurance lines of business for Individual Markets, mostly offset by higher sales in the annuity line of business for Individual Markets.

Premium and deposits for the twelve months ended December 31, 2018 decreased by US$0.2 billion to US$9.8 billion compared to the same period last year, primarily due to the same reasons discussed for the in-quarter results.

Premiums and deposits for the fourth quarter of 2018 decreased by US$0.1 billion compared to the previous quarter, primarily due to lower deposits from existing Empower Retirement participants and lower annuity sales within Individual Markets.

Sales

Sales in the fourth quarter of 2018 increased by US$4.7 billion to US$11.1 billion compared to the same quarter last year, primarily due to an increase in Empower Retirement large plan sales. Large plan sales can be highly variable from period to period and tend to be lower margin.

For the twelve months ended December 31, 2018, sales increased by US$7.6 billion to US$35.6 billion compared to the same period last year, primarily due to an increase in Empower Retirement large and mid-size plan sales.

Sales in the fourth quarter of 2018 increased by US$3.3 billion compared to the previous quarter, primarily due to the same reasons discussed for the in-quarter results.

Empower Retirement – customer account values (US$)

	Change for the twelve months ended December 31		Total at December 31		
	2018	2017	2018	2017	% Change
General account – fixed options	$ **372**	$ 388	$ **12,979**	$ 12,607	3%
Segregated funds – variable options	**(4,040)**	(415)	**14,966**	19,006	(21)
Proprietary mutual funds [(1)]	**333**	3,815	**24,098**	23,765	1
Unaffiliated retail investment options & administrative services only	**(10,399)**	75,457	**463,883**	474,282	(2)
	$ **(13,734)**	$ 79,245	$ **515,926**	$ 529,660	(3)%

(1) At December 31, 2018, proprietary mutual funds included US$10.6 billion in Putnam managed funds (US$9.7 billion at December 31, 2017).

Empower Retirement customer account values at December 31, 2018 decreased by US$13.7 billion compared with December 31, 2017, primarily due to lower equity market levels, partially offset by net cash inflows. Net cash inflows for the general account, proprietary mutual funds, and unaffiliated retail investment options and administrative services only account values were partially offset by net asset outflows for segregated funds.

Fee and other income

Fee income is derived primarily from assets under management, assets under administration, shareholder servicing fees, administration and recordkeeping services and investment advisory services. Generally, fees are earned based on assets under management, assets under administration or the number of plans and participants for which services are provided.

Fee and other income for the fourth quarter of 2018 increased by US$4 million to US$272 million compared to the same quarter last year, primarily due to higher average equity market levels and growth in participants.

For the twelve months ended December 31, 2018, fee and other income increased by US$66 million to US$1,105 million compared to the same period last year, primarily due to the same reasons discussed for the in-quarter results.

Fee and other income for the fourth quarter of 2018 decreased by US$11 million compared to the previous quarter, primarily due to lower average equity market levels, partially offset by growth in participants.

Net earnings

Net earnings for the fourth quarter of 2018 of US$63 million were comparable to the same quarter last year. An increase in variable annuity insurance contract liabilities due to equity market declines, lower contributions from investment experience and lower contributions from insurance contract liability basis changes were offset by the impact of the U.S. corporate tax changes, which increased earnings by US$14 million, and net business growth.

For the twelve months ended December 31, 2018, net earnings increased by US$29 million to US$306 million compared to the same period last year. The increase was primarily due to the impact of the U.S. corporate tax changes, which resulted in increased earnings of US$53 million, and net business growth. The increase was partially offset by lower contributions from investment experience, an increase in variable annuity insurance contract liabilities due to equity market declines, higher operating expenses and unfavourable mortality experience. Included in 2017 year-to-date earnings was a one-time expense recovery related to a change in future obligations for an employee pension plan.

Net earnings for the fourth quarter of 2018 decreased by US$30 million compared to the previous quarter, primarily due to lower contributions from insurance contract liability basis changes, an increase in variable annuity insurance contract liabilities due to equity market declines, and lower contributions from investment experience, partially offset by lower operating expenses.

Outlook – Financial Services

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

On January 24, 2019, Great-West Financial reached an agreement to sell, via reinsurance, substantially all of its individual life insurance and annuity business to Protective Life. The Company estimates that this will result in an after-tax transaction value of approximately $1.6 billion (US$1.2 billion). The transaction is expected to close in the first half of 2019. Post-transaction, Great-West Financial will focus on the defined contribution retirement market and its Empower Retirement brand.

As the second largest recordkeeping provider in the U.S., Empower Retirement is positioned for significant growth opportunities with expertise and diversification across all plan types, company sizes and market segments. Great-West Financial continually examines opportunities to structure products and develop strategies to stimulate growth in assets under management.

In 2019, Empower Retirement's strategies to drive sales growth will continue to include active marketing of the brand, investing in product differentiation and offering a best-in-class service model. In 2018, service enhancements were made to this model including standardizing and improving client-facing tools, optimizing advisor relationship management and client alignment as well as adopting best practices for participant communications. In 2019, investments will continue to be made to improve the customer web experiences, including adding innovative capabilities and ease of service products. These efforts are expected to increase customer retention and ultimately increase participant retirement savings.

In 2019, Great-West Financial will continue to pursue operational efficiencies. Empower Retirement will continue to focus on its unique, interactive web-based experience which was launched to help participants understand their retirement income needs. Great-West Global, which launched in 2015 and has over 1,000 professionals based in India, will continue to expand with a focus on driving lower unit costs.

Asset Management

2018 Developments

- Putnam's ending assets under management (AUM) at December 31, 2018 of US$160.2 billion decreased by US$11.3 billion compared to the same period last year, while average AUM for the twelve months ended December 31, 2018 of US$172.6 billion increased by US$9.0 billion compared to the same period last year.
- Putnam's net asset inflows for the twelve months ended December 31, 2018 were US$0.4 billion compared to net asset outflows of US$0.3 billion in the prior period. Included in net asset inflows for the twelve months ended December 31, 2018 were mutual fund net inflows of US$2.4 billion.
- At December 31, 2018, Putnam had 22 active mutual funds with an overall rating of four or five stars by Morningstar, Inc., a global investment research and investment management firm.
- Putnam continues to sustain strong investment performance relative to its peers. As of December 31, 2018, approximately 87% of Putnam's fund assets performed at levels above the Lipper median on a three-year basis.
- For the 29th consecutive year, Putnam has been recognized by DALBAR Inc. for mutual fund service quality. This recognition includes Putnam being named as a DALBAR Mutual Fund Service Award winner for 27 of those years. Additionally, Putnam has been named the sole recipient of DALBAR's Total Client Experience Award recognizing overall mutual fund customer service quality for the past seven years.
- During the fourth quarter of 2018, Putnam launched a new campaign, "Always Active", designed to showcase the firm's strong active management capabilities and build awareness among financial advisors and investors about the importance of including an active approach when building a diversified investment portfolio; seeking to outperform benchmarks and looking for opportunities in changing markets. The campaign will run through 2019 and reinforces Putnam's commitment to providing the marketplace with an array of differentiated active management strategies with solid, risk-adjusted net-of-fee performance.

Operating Results

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017 (1) (4)	**Dec. 31 2018**	Dec. 31 2017 (1) (4)
Sales	**$ 17,483**	$ 14,128	$ 11,016	**$ 59,848**	$ 45,499
Fee income					
Investment management fees (1)	**199**	212	204	**821**	808
Performance fees	**(8)**	(9)	(10)	**(38)**	(23)
Service fees	**37**	38	37	**148**	150
Underwriting & distribution fees (1)	**57**	61	64	**241**	258
Fee income (1)	**285**	302	295	**1,172**	1,193
Core net earnings (loss) (2) (4)	**(18)**	4	(7)	**(11)**	19
Less: Financing and other expenses (after-tax) (2)	**(11)**	(12)	2	**(50)**	(40)
Reported net earnings (loss) (4)	**(29)**	(8)	(5)	**(61)**	(21)
Sales (US$)	**$ 13,245**	$ 10,785	$ 8,674	**$ 46,164**	$ 35,125
Fee income (US$)					
Investment management fees (US$) (1)	**151**	162	161	**634**	624
Performance fees (US$)	**(6)**	(7)	(8)	**(30)**	(18)
Service fees (US$)	**28**	29	29	**115**	115
Underwriting & distribution fees (US$) (1)	**43**	47	50	**186**	200
Fee income (US$) (1)	**216**	231	232	**905**	921
Core net earnings (loss) (US$) (2) (4)	**(14)**	3	(6)	**(8)**	15
Less: Financing and other expenses (after-tax) (US$) (2)	**(8)**	(9)	2	**(39)**	(30)
Reported net earnings (loss) (US$) (4)	**(22)**	(6)	(4)	**(47)**	(15)
Pre-tax operating margin (1) (3) (4)	**(10.8)%**	2.0%	1.2%	**(1.5)%**	4.2%
Average assets under management (US$)	**$ 168,743**	$ 175,223	$ 169,837	**$ 172,579**	$ 163,591

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

(2) Core net earnings (loss) (a non-IFRS financial measure) is a measure of the Asset Management business unit's performance. Core net earnings (loss) includes the impact of dealer commissions and software amortization and excludes the impact of certain corporate financing charges and allocations, certain tax adjustments and other non-recurring transactions.

(3) Pre-tax operating margin (a non-IFRS financial measure) is a measure of the Asset Management business unit's pre-tax core net earnings (loss) divided by the sum of fee income and net investment income.

(4) For the three and twelve months ended December 31, 2017, core and reported net earnings exclude the impact of the net charge related to Assets Held for Sale and the impact of U.S. tax reform, which are included in U.S. Corporate.

Sales

Sales in the fourth quarter of 2018 increased by US$4.6 billion to US$13.2 billion compared to the same quarter last year, primarily due to an increase in mutual fund sales of US$3.4 billion and an increase in institutional sales of US$1.2 billion.

For the twelve months ended December 31, 2018, sales increased by US$11.0 billion to US$46.2 billion compared to the same period last year, primarily due to an increase in mutual fund sales of US$9.5 billion and an increase in institutional sales of US$1.5 billion.

Sales in the fourth quarter of 2018 increased by US$2.5 billion compared to the previous quarter, due to a US$1.6 billion increase in mutual fund sales and a US$0.9 billion increase in institutional sales.

Fee income

Fee income is derived primarily from investment management fees, performance fees, transfer agency and other service fees, as well as underwriting and distribution fees. Generally, fees are earned based on AUM and may depend on financial markets, the relative performance of Putnam's investment products, the number of retail accounts and sales. Performance fees are generated on certain mutual funds and institutional portfolios and are generally based on a rolling 36-month performance period for mutual funds and a 12-month performance period for institutional portfolios. Performance fees on mutual funds are symmetric, and as a result, can be positive or negative.

Fee income for the fourth quarter of 2018 decreased by US$16 million to US$216 million compared to the same quarter last year. The decrease was primarily due to lower investment management fees, driven by lower average AUM and a change in asset mix, and lower underwriting and distribution fees earned on the sale of certain classes of mutual funds.

For the twelve months ended December 31, 2018, fee income decreased by US$16 million to US$905 million compared to the same period last year. Fee income for the twelve months ended December 31, 2017 included US$12 million related to proceeds earned from the sale of a previously impaired investment product. Excluding this item, fee income decreased by US$4 million, primarily due to lower underwriting and distribution fees earned on the sale of certain classes of mutual fund, partially offset by higher investment management fees driven by higher average AUM.

Fee income for the fourth quarter of 2018 decreased by US$15 million compared to the previous quarter, primarily due to the same reasons discussed for the in-quarter results.

Net earnings

The core net loss (a non-IFRS financial measure) for the fourth quarter of 2018 was US$14 million compared to a core net loss of US$6 million for the same quarter last year. The core net loss increased by US$8 million primarily due to lower net investment income and lower fee income, driven by lower average AUM. These items were partially offset by lower expenses and lower income taxes, driven by the impact of a reduction in the U.S. corporate tax rate. In the fourth quarter of 2018, the reported net loss, including financing and other expenses, was US$22 million compared to a reported net loss of US$4 million for the same quarter last year. Financing and other expenses for the fourth quarter of 2018 increased by US$10 million to US$8 million compared to the same quarter last year, due to the reversal of a previously impaired indefinite life intangible asset of US$10 million in the fourth quarter of 2017.

For the twelve months ended December 31, 2018, the core net loss was US$8 million, compared to core net earnings of US$15 million for the same period last year. Core net earnings for the twelve months ended December 31, 2017 included US$7 million related to the sale of a previously impaired investment product. Excluding this item, the core net loss increased by US$16 million, primarily due to lower net investment income, partially offset by lower expenses and lower income taxes, driven by the impact of a reduction in the U.S. corporate tax rate. For the twelve months ended December 31, 2018, the reported net loss, including financing and other expenses, was US$47 million compared to a reported net loss of US$15 million for the same period last year. Financing and other expenses for the twelve month period ended December 31, 2018 increased by US$9 million to US$39 million compared to the same period last year, primarily due to the same reasons discussed for the in-quarter results.

The core net loss for the fourth quarter of 2018 was US$14 million compared to core net earnings of US$3 million for the previous quarter. The core net loss increased by US$17 million, primarily due to lower net investment income and lower fee income driven by lower average AUM. The reported net loss, including financing and other expenses, for the fourth quarter of 2018, was US$22 million compared to a reported net loss of US$6 million for the previous quarter. Financing and other expenses for the fourth quarter of 2018 decreased by US$1 million to US$8 million compared to the previous quarter.

Assets Under Management

Assets under management (US$)

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Beginning assets	**$ 177,199**	$ 172,445	$ 167,798	**$ 171,458**	$ 152,122
Sales – Mutual funds	**8,817**	7,242	5,408	**29,454**	19,892
Redemptions – Mutual funds	**(8,341)**	(5,580)	(5,605)	**(27,036)**	(21,462)
Net asset flows – Mutual funds	**476**	1,662	(197)	**2,418**	(1,570)
Sales – Institutional	**4,428**	3,543	3,266	**16,710**	15,233
Redemptions – Institutional	**(6,055)**	(3,995)	(3,898)	**(18,712)**	(13,975)
Net asset flows – Institutional	**(1,627)**	(452)	(632)	**(2,002)**	1,258
Net asset flows – Total	**(1,151)**	1,210	(829)	**416**	(312)
Impact of market/performance	**(15,848)**	3,544	4,489	**(11,674)**	19,648
Ending assets	**$ 160,200**	$ 177,199	$ 171,458	**$ 160,200**	$ 171,458
Average assets under management					
Mutual funds	**79,198**	81,657	78,030	**79,780**	75,612
Institutional assets	**89,545**	93,566	91,807	**92,799**	87,979
Total average assets under management	**$ 168,743**	$ 175,223	$ 169,837	**$ 172,579**	$ 163,591

Average AUM for the three months ended December 31, 2018 were US$168.7 billion, a decrease of US$1.1 billion or 1% compared to the same quarter last year, primarily due to the cumulative impact of negative markets and institutional net asset outflows over the twelve month period. Net asset outflows for the fourth quarter of 2018 were US$1.2 billion compared to net assets outflows of US$0.8 billion for the same quarter last year. In-quarter mutual fund net asset inflows were US$0.5 billion and institutional net asset outflows were US$1.7 billion.

Average AUM for the twelve months ended December 31, 2018 increased by US$9.0 billion to US$172.6 billion or 5% compared to the same period last year, primarily due to mutual fund net asset inflows over the twelve month period and the timing of market movements. Net asset inflows for the twelve months ended December 31, 2018 were US$0.4 billion compared to net assets outflows of US$0.3 billion for the same period last year. Year-to-date mutual fund net asset inflows of US$2.4 billion were mostly offset by institutional net asset outflows of US$2.0 billion.

Average AUM for the three months ended December 31, 2018 decreased by US$6.5 billion compared to the previous quarter, primarily due to the impact of negative markets.

Outlook – Asset Management

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

Putnam remains committed to providing strong, long-term investment performance across asset classes for its clients and investors in the mutual fund, institutional and retirement marketplaces.

In 2019, Putnam will continue to focus efforts on driving growth and market share through new sales and asset retention in all markets it serves including Global Institutional, PanAgora (Putnam's quantitative institutional manager), U.S. Retail and Defined Contribution Investment Only, while maintaining its industry recognized reputation for service excellence.

Innovation will remain a key differentiator in 2019, as Putnam further develops its product offerings, service features and operational functions, while bolstering its corporate and business/product brand image with a wide range of key constituents. Putnam continues to increasingly incorporate digital technology throughout its business to drive greater efficiencies and create business opportunities.

Putnam will continue to focus on growth of revenues and assets in 2019, while at the same time managing firm-wide expenses, as the firm seeks to build a scalable, profitable asset management franchise.

United States Corporate

U.S. Corporate consists of items not associated directly with or allocated to the United States business units, including the impact of certain non-continuing items related to the U.S. segment.

In the fourth quarter of 2018, net earnings were nil compared to a net loss of US$294 million for the same period in 2017. The net loss in the fourth quarter of 2017 included the impact of U.S. tax reform, which was a net charge of US$198 million, reflecting a US$353 million reduction of deferred tax assets in the Asset Management business unit, partially offset by a US$155 million reduction to deferred tax liabilities, primarily related to the Financial Services business unit. The impact of the sale of an equity investment in Nissay Asset Management Corporation (Nissay), included in assets held for sale at December 31, 2017, contributed a further net charge of US$96 million in the fourth quarter of 2017. Excluding these items, adjusted net earnings for the fourth quarter of 2018 were comparable to the same quarter last year.

For the twelve months ended December 31, 2018, net earnings increased by US$337 million to US$33 million compared to the same period in 2017. The net loss for the twelve months ended December 31, 2017 included the impact of U.S. tax reform and sale of an equity investment discussed for the in-quarter results as well as US$8 million of restructuring costs primarily relating to Empower Retirement. Excluding these items, adjusted net earnings increased by US$35 million, primarily due to a gain on terminating an interest rate hedge as part of a debt refinancing transaction, partially offset by a provision for an ongoing legal matter.

In the fourth quarter of 2018, net earnings of nil were comparable to the previous quarter.

The year-to-date 2018 U.S. Corporate U.S. dollar net earnings do not include $9 million of net foreign currency exchange gains, which occurred in the second quarter of 2018 as a result of debt redemptions as they do not have a U.S. dollar equivalent. These amounts are only included in Canadian dollar net earnings.

Europe

The Europe segment comprises two distinct business units: Insurance & Annuities and Reinsurance, together with an allocation of a portion of Lifeco's corporate results. Insurance & Annuities provides protection and wealth management products, including payout annuity products, through subsidiaries of Canada Life in the U.K., the Isle of Man and Germany, as well as through Irish Life in Ireland. Reinsurance operates primarily in the U.S., Barbados and Ireland, and is conducted through Canada Life, London Life and their subsidiaries.

Translation of Foreign Currency

Foreign currency assets and liabilities are translated into Canadian dollars at the market rate at the end of the financial period. All income and expense items are translated at an average rate for the period.

Currency translation impact is a non-IFRS financial measure that highlights the impact of changes in currency translation rates on IFRS results. This measure provides useful information as it facilitates the comparability of results between periods. Refer to the Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

Business Profile

Insurance & Annuities

The core products offered in the U.K. are guaranteed annuities, investments (including retirement drawdown and pension), individual protection and group insurance. These products are distributed through financial advisors and employee benefit consultants. The international operations based in the Isle of Man and Ireland offer investment, savings and individual protection products that are sold through financial advisors and private banks in the U.K. Canada Life Investments is the fund management division in the U.K. and manages over £37 billion of assets. These include equities, fixed-income, property, mortgages and cash for companies in the Lifeco group as well as a wide range of insured life, pension and retail collective funds. The funds are distributed mainly through financial advisors as well as wealth managers and discretionary managers in the U.K.

On January 2, 2018, The Canada Life Group (U.K.) Limited, a subsidiary of the Company, completed the acquisition of U.K. financial services provider Retirement Advantage. The Retirement Advantage acquisition adds further expertise in the growing U.K. retirement income market and broadens the product suite to include equity release mortgages.

On June 21, 2018, Canada Life Limited, an indirect wholly-owned subsidiary of the Company, announced an agreement to sell a heritage block of individual policies to Scottish Friendly. Canada Life Investments will continue to manage a substantial portion of the transferring unit-linked assets. The transferring block of policies has been mostly closed to new business since 2003 and comprises life and pension savings policies as well as some protection policies all written in the U.K.

The core products offered by Irish Life in Ireland are savings and investments, individual and group life insurance, health insurance and pension products. These products are distributed through independent brokers, a direct sales force and tied agent bank branches. Irish Life Health offers individual and corporate health plans, distributed through independent brokers and direct channels. Irish Life Investment Managers (ILIM) is one of the Company's fund management operations in Ireland and manages approximately €67 billion of assets. In addition to managing assets on behalf of companies in the Lifeco group, ILIM also manages assets for a wide range of institutional and retail clients, occupational defined benefit and defined contribution pension schemes, large multinational corporations, charities and domestic companies.

On August 1, 2018, Irish Life completed the acquisition of a controlling interest in Invesco, an independent financial consultancy firm in Ireland that specializes in employee benefit consultancy and private wealth management.

The German operation focuses on pension, lifetime GMWB and individual protection products that are distributed through independent brokers and multi-tied agents.

Insurance & Annuities continues to expand its presence in its defined market segments by focusing on the introduction of innovative products and services, the quality of its service offerings as well as the enhancement of distribution capabilities and intermediary relationships.

Reinsurance

Reinsurance operates primarily in the U.S., Barbados and Ireland. In the U.S., the reinsurance business operates through branches of Canada Life, London Life, subsidiaries of London Life and an indirect subsidiary of Great-West Financial. In Barbados, the reinsurance business operates primarily through branches of Canada Life, London Life and subsidiaries of London Life. In Ireland, the reinsurance business operates through a subsidiary of Canada Life.

The Company's business includes both reinsurance and retrocession business transacted directly with clients or through reinsurance brokers. As a retrocessionaire, the Company provides reinsurance to other reinsurers to allow those companies to manage their insurance risk.

The product portfolio offered by the Company includes life, annuity, mortgage and property catastrophe reinsurance, provided on both a proportional and non-proportional basis.

In addition to providing reinsurance products to third parties, the Company also utilizes internal reinsurance transactions between companies in the Lifeco group. These transactions are undertaken to better manage insurance risks relating to retention, volatility and concentration; and to facilitate capital management for the Company, its subsidiaries and branch operations. These internal reinsurance transactions may produce benefits that are reflected in one or more of the Company's other business units.

Market Overview

Products and Services

Insurance & Annuities

Market Position

U.K.
- The market leader of the group life market, with 24% share (1)
- A market leader in group income protection, with 17% share (1)
- Among the top four insurers in payout annuities, with a market share in excess of 17% (Advisor only) (2)
- A market leading international life company selling into the U.K. market, with 31% market share (3)
- Among the top three in the onshore unit-linked single premium bond market, with 19% market share (Advisor only) (3)

Ireland
- The market leading life assurance company, with 37% share (4)
- Leading position in the retail life and pensions market, with a 34% share (4)
- Leading positions in the group pensions, group risk and corporate annuities markets with a 41% share (4)
- ILIM is one of the largest institutional fund managers in Ireland with €67 billion assets under management (5)
- Third largest health insurance business through Irish Life Health (1)

Germany
- 5% share of the broker market (3)

Products and Services

U.K.
- Individual and bulk payout annuities
- Fixed term annuities
- Individual Savings and Investments (Retirement Drawdown & Pension, Onshore & International bonds and collective investment funds)
- Group and personal life insurance
- Group and personal income protection (disability)
- Group and personal critical illness
- Equity release mortgages

Ireland
- Individual and group risk & pensions
- Individual and bulk payout annuities
- Health insurance
- Wealth management services
- Individual savings and investment
- Institutional investment management

Germany
- Pensions
- Income protection (disability)
- Critical illness
- Variable annuities (GMWB)
- Individual life insurance

Insurance & Annuities (cont'd)

Distribution

U.K.
- Financial advisors
- Private banks
- Employee benefit consultants

Ireland
- Independent brokers
- Pensions and investment consultants
- Direct sales force
- Tied bank branch distribution with various Irish banks

Germany
- Independent brokers
- Multi-tied agents

(1) As at December 31, 2017
(2) Market share based on annualized Q1 to Q3 2018 data through financial advisors, restricted whole market advisors and non-advised distributor. Includes sales from Retirement Advantage acquired on January 2, 2018.
(3) Market share based on Q1 to Q3 2018 data
(4) As at June 30, 2018
(5) As at December 31, 2018

Reinsurance

Market Position
- Among the top two life reinsurers in the U.S. for assumed structured life reinsurance (1)
- Positioned to participate in the developments of the evolving European structured life reinsurance market
- Ranked 6th for traditional mortality reinsurance in the U.S.
- Leading provider of U.K. and other European annuity/longevity reinsurance
- Long-standing provider of a range of property and casualty catastrophe retrocession protection coverages

Products and Services

Life
- Yearly renewable term
- Co-insurance
- Modified co-insurance
- Capital relief solutions

Annuity / Longevity
- Payout annuity
- Longevity protection
- Fixed annuity

Property & Casualty
- Catastrophe retrocession

Distribution
- Independent reinsurance brokers
- Direct placements

(1) As at November 30, 2017

Competitive Conditions

United Kingdom

In the U.K., the Company has strong market positions for group risk, where it is a market leader, payout annuities and wealth management products. Combined sales from the onshore and international wealth management businesses put Canada Life as one of the top single investment premium bond providers in the U.K. The Company's market position in the U.K. for annuities and wealth management has been further strengthened by the acquisition of Retirement Advantage in January 2, 2018.

The market for payout annuities continued to grow in 2018, albeit at a slower rate than in 2017. The Company has benefited from an increase in the proportion of customers seeking the best price in the open market, which in turn has also increased the proportion of annuities sold through financial advisors, the Company's primary distribution channel. The Company continues to offer both standard and enhanced annuities as well as investment based pension and drawdown products for customers wanting to take advantage of the greater pension flexibility introduced in recent years. The Company expects further growth in the retirement retail market and is well placed to continue to grow in this market, supported by the expertise and addition of equity release mortgages gained through the Retirement Advantage purchase. The equity release mortgage sector is becoming an increasingly important part of the retirement retail market and is expected to be an area of growth. The Company also offers bulk annuities aimed at trustees of defined benefits plans who want to insure pension annuities in payment. This is a sizeable market and demand from trustees remains strong. The market is expected to grow as pension plan funding improves and trustees consider ways to reduce risk. With expertise and experience in longevity and investment products, the Company is well placed to continue to grow bulk annuity new business.

In international wealth management operations, there was market growth of 8% during the year. Continued efforts to increase sales within the retail market along with strong sales from the institutional sector of the market resulted in total sales of over £1.2 billion for 2018. Future estate planning continues to be an area of focus for U.K. advisors and Canada Life International remains one of the leading companies in this sector of the market.

The Company has seen market volatility as a result of the Brexit vote. It is anticipated that the current conditions will continue until further clarity is provided as to the details of the exit process and the ongoing relationship between the U.K. and the European Union (EU). The impacts on the business are expected to be small as the Company's businesses are principally domestic to the countries where they are based.

Ireland

The Company maintained its market-leading presence in Ireland through Irish Life and continues to be the largest life assurance company with a market share of 37% (as at June 2018). Irish Life follows a multi-channel distribution strategy with the largest broker distribution network, the largest direct sales force and the largest Bancassurance distribution network where it has tied relationships with five banks.

Irish Life Investment Managers is one of Ireland's largest institutional fund managers with approximately €67 billion of assets under management, including funds managed for other companies within the Lifeco group, as at December 31, 2018. During 2018, in addition to maintaining its market leading position in Ireland, ILIM continued to expand its business relationships in the U.S., Canada, the U.K. and Europe.

Setanta Asset Management, a subsidiary of Canada Life, manages assets for a number of institutional clients, both third-party institutions as well as for companies in the Lifeco group and has approximately €10 billion of assets under management as at December 31, 2018.

The Company operates its Irish health insurance business under the Irish Life Health brand, where it has a top three position with 20% market share, as at December 31, 2017.

Germany

Canada Life has established a leading position among providers of products to the German independent intermediary market. The Company is among the top six providers in the independent intermediary market through continuous product, technology and service improvements and sales have grown 6% in 2018. The market for traditional German insurance products has been challenging following the introduction of Solvency II in 2016 and the reductions in the statutory guaranteed interest rate on these products. This new environment continues to create growth opportunities for Canada Life.

Reinsurance

In the U.S. life reinsurance market, insurers continue to view reinsurance as an increasingly important tool for risk and capital management. Several competitors are now focusing on growing their market share, which resulted in increased competition. However, an independent industry survey released in November 2017 confirmed that the Company remains one of the top two providers of risk and capital management solutions in the U.S. market.

The Company has also had success in traditional life reinsurance as the number of remaining life reinsurers is declining due to consolidation and clients valuing diversification of reinsurers. The Company's financial strength and ability to offer both capital solutions and traditional mortality reinsurance continues to be a competitive advantage.

In Europe, Solvency II dominates the regulatory landscape and interest in capital relief transactions that produce capital benefits continues to grow. Demand for longevity reinsurance remains very strong in the U.K. and some continental European countries. As a result, there are now more reinsurers participating in this market, but even so, demand for longevity coverage continues to exceed supply.

Selected consolidated financial information – Europe

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Premiums and deposits	**$ 10,357**	$ 10,955	$ 11,660	**$ 40,489**	$ 38,155
Fee and other income	**348**	373	368	**1,480**	1,386
Net earnings – common shareholders	**349**	263	358	**1,311**	1,152
Adjusted net earnings – common shareholders (1)	**349**	319	308	**1,367**	1,121
Total assets	**$ 180,842**	$ 180,529	$ 174,015		
Proprietary mutual funds and institutional net assets	**40,375**	40,399	39,521		
Total assets under management	**221,217**	220,928	213,536		
Other assets under administration	**45,024**	45,035	41,945		
Total assets under administration (2)	**$ 266,241**	$ 265,963	$ 255,481		

(1) Adjusted net earnings attributable to common shareholders is a non-IFRS financial measure of earnings performance. Adjustments are detailed in footnote 6 to the Selected Consolidated Financial Information table of this MD&A.

(2) At December 31, 2018, total assets under administration excludes $7.8 billion of assets managed for other business units within the Lifeco group of companies ($8.4 billion at September 30, 2018 and $8.2 billion at December 31, 2017).

Net earnings – common shareholders

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Insurance & Annuities	**$ 271**	$ 240	$ 250	**$ 1,036**	$ 947
Reinsurance	**89**	87	67	**377**	190
Europe Corporate	**(11)**	(64)	41	**(102)**	15
Net earnings – common shareholders	**$ 349**	$ 263	$ 358	**$ 1,311**	$ 1,152
Adjustments					
Restructuring costs	**–**	56	4	**56**	23
U.S. tax reform impact	**–**	–	(54)	**–**	(54)
Adjusted net earnings – common shareholders (1)	**$ 349**	$ 319	$ 308	**$ 1,367**	$ 1,121

(1) Adjusted net earnings attributable to common shareholders is a non-IFRS financial measure of earnings performance. Adjustments are detailed in footnote 6 to the Selected Consolidated Financial Information table of this MD&A.

2018 Developments

- During 2018, the Company commenced certain restructuring initiatives in its U.K. operations relating to the integration of Retirement Advantage, which was acquired in the first quarter of 2018, as well as the pending sale of a heritage block of policies to Scottish Friendly, announced on June 21, 2018. The integration of Retirement Advantage and the sale of the heritage block of policies are subject to various regulatory and court approvals and are expected to occur in the second half of 2019.

  In addition to the restructuring costs recorded in the third quarter of 2018, as part of the transformation program, the Company intends to invest in additional system functionality and digital capacities as well as expand the range of products offered in the U.K. In addition to the strategic benefits, the Company expects to realize total annualized expense savings of £20 million pre-tax by the end of the fourth quarter of 2020 from various sources including system exit costs and a reduction in headcount. Annualized savings achieved as of December 31, 2018 on the U.K. restructuring program are £3 million pre-tax.
- On August 1, 2018, Irish Life Group Limited, a subsidiary of the Company, completed the previously-announced acquisition of a controlling interest in Invesco, an independent financial consultancy firm. Invesco manages 275 occupational pension plans on behalf of large corporations in Ireland, along with pension plans for over 500 small and medium companies. The acquisition of Invesco added $4.3 billion to Europe's other assets under administration (as of December 31, 2018). The transaction is expected to be earnings accretive, although it is not expected to have a material impact on the Company's financial results.
- In the U.K., the Company completed four significant bulk annuity deals in the third quarter of 2018, with total premiums exceeding £1.3 billion, signifying the Company's strong presence in the bulk annuity market.

- Some market volatility continues as the U.K. prepares to exit the EU although details have not yet been agreed. The Company's U.K. and other European businesses are executing plans that will address and minimize the impact under several different outcomes, including where the U.K. has no exit agreements wit the EU. While there are some impacts from market uncertainty, the impacts are not expected to have a material impact on the Company's financial results.
- During the year, the Company's subsidiaries received strong ratings from various independent ratings companies:
  - During the third quarter of 2018, A.M. Best Company upgraded the Financial Strength rating to A+ from A for certain reinsurance companies. This reflects A.M. Best Company's view of the increased strategic importance of the reinsurance entities to the Company's current and future operations.
  - During the second quarter of 2018, ASSEKURATA Assekuranz Rating-Agentur GmbH (Assekurata), a German rating agency, reconfirmed Canada Life Assurance Europe plc, a subsidiary of the Company, AA- Credit Rating, which is the highest rating Assekurata has awarded any life insurance company in Germany.
- During the fourth quarter of 2018, the Company received the following awards:
  - In the U.K., Canada Life achieved the maximum '5 stars' in the 2018 Financial Adviser Service Awards in both the "Life and Pensions" and "Investment Provider and Packagers" categories for the third consecutive year.
  - In the U.K., Canada Life was awarded "Best Provider Lifetime Mortgages" at the Equity Release Awards, "Best Group Income Protection" at the 2018 COVER Excellence Awards, "International Life Group" at the 2018 International Adviser Awards as well as "Best International Life Group" at the 2018 International Investment Awards.
  - At the 2018 Irish Pension Awards, Irish Life Investment Managers won "Property Manager of the Year" and "Passive Manager of the Year" while Setanta Asset Management won "Equities Manager of the Year."
  - For the second consecutive year, Canada Life in Germany received the highest Net Promotor Score of Life Companies in the industry leading independent intermediary survey from KUBUS Broker.
  - Cornmarket, an indirect subsidiary of the Company, won "Best Insurance Broker to the Public Sector" at the Excellence in Business Awards 2018 for The Public Sector Magazine.
  - At the 2018 Irish CX Impact Awards, Irish Life Financial Services won the "CX Impact in Financial Services" award, recognizing achievements in measuring and managing customer experience excellence in the financial services industry.

Business Units – Europe

Insurance & Annuities

Operating Results

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Premiums and deposits (1)	**$ 6,485**	$ 7,848	$ 8,665	**$ 26,985**	$ 25,426
Sale (1)	**5,972**	7,235	7,325	**24,481**	21,938
Fee and other income	**345**	370	361	**1,467**	1,366
Net earnings	**271**	240	250	**1,036**	947

(1) For the three and twelve months ended December 31, 2018, premiums and deposits and sales exclude $0.4 billion and $0.9 billion, respectively, of assets managed for other business units within the Lifeco group of companies ($0.1 billion and $0.6 billion for the three and twelve months ended December 31, 2017 and $0.2 billion for the three months ended September 30, 2018).

Premiums and deposits

Premiums and deposits for the fourth quarter of 2018 decreased by $2.2 billion to $6.5 billion compared to the same quarter last year, primarily due to lower fund management sales and lower bulk payout annuity sales in Ireland, partially offset by higher pension sales in Ireland. The fourth quarter of 2017 included a large bulk payout annuity sale in Ireland, which did not recur in 2018.

For the twelve months ended December 31, 2018, premiums and deposits increased by $1.6 billion to $27.0 billion compared to the same period last year, primarily due to higher bulk annuity and wealth management sales in the U.K., higher pensions sales in Ireland and the impact of currency movement. These items were partially offset by lower fund management sales in Ireland.

Premiums and deposits for the fourth quarter of 2018 decreased by $1.4 billion compared to the previous quarter, primarily due to lower bulk annuity sales in the U.K., partially offset by higher pensions sales in Ireland.

Sales

Sales for the fourth quarter of 2018 decreased by $1.4 billion to $6.0 billion compared to the same quarter last year, primarily due to lower fund management and lower large bulk annuity sales in Ireland, partially offset by higher equity release mortgage sales related to Retirement Advantage, which was acquired in the first quarter of 2018.

For the twelve months ended December 31, 2018, sales increased by $2.5 billion to $24.5 billion compared to the same period last year, primarily due to higher bulk annuity and equity release mortgage sales in the U.K., higher pensions sales in Ireland and the impact of currency movement. These items were partially offset by lower fund management sales in Ireland.

Sales for the fourth quarter of 2018 decreased by $1.3 billion compared to the previous quarter, primarily due to the same reasons discussed for premiums and deposits for the same period.

Fee and other income

Fee and other income for the fourth quarter of 2018 decreased by $16 million to $345 million compared to the same quarter last year, primarily due to lower other income in Ireland, which can be highly variable from quarter to quarter.

For the twelve months ended December 31, 2018, fee and other income increased by $101 million to $1,467 million compared to the same period last year. The increase was primarily due to higher asset management fees in Ireland and Germany as well as the impact of currency movement.

Fee and other income for fourth quarter of 2018 decreased by $25 million compared to the previous quarter, primarily due to lower other income in Ireland.

Net earnings

Net earnings for the fourth quarter of 2018 increased by $21 million to $271 million compared to the same quarter last year. The increase was primarily due to more favourable impact of new business relating to payout annuities, more favourable mortality experience and the impact of changes to certain tax estimates. The increase was partially offset by lower contributions from investment experience and lower contributions from insurance contract liability basis changes.

Net earnings for the twelve months ended December 31, 2018 increased by $89 million to $1,036 million compared to the same period last year. The increase was primarily due to higher contributions from insurance contract liability basis changes related to the impact of updated annuitant mortality assumptions, favourable mortality experience, higher new business volumes on payout annuities as well as the impact of changes to certain tax estimates and currency movement. The increase was partially offset by lower contributions from investment experience and a gain on the sale of the Company's Allianz Ireland holdings in the first quarter of 2017.

Net earnings for the fourth quarter of 2018 increased by $31 million compared to the previous quarter, primarily due to higher contributions from investment experience and the impact of changes in certain tax estimates. The increase was partially offset by lower contributions from insurance contract liability basis changes and higher strategic and business development expenses.

Outlook – Insurance & Annuities

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

United Kingdom – The outlook for the payout annuities market in 2019 is for modest growth. Since April 2015, individuals have had greater flexibility for accessing their savings in retirement. As expected, some individuals have chosen to remain invested in the market while drawing a pension income rather than buying a payout annuity. However, the Company expects that the attractiveness of guaranteed income from annuities will remain a key part of customers' retirement planning in the future and the Company sees the opportunity to grow its payout annuity business in line with the expected growth in the overall retirement market. The Retirement Advantage acquisition in early 2018 creates a strong platform for growth in the U.K.'s growing equity release and retirement income markets. The Company will continue to develop products for individuals who require additional pension flexibility. The overall size of the retirement market continues to grow as more employers transition from defined benefit to defined contribution pension plans, with significant growth expected in equity release, pension consolidation and income drawdown. The Company will also look to further develop its presence in the bulk annuity market where trustees of defined benefit schemes want to remove longevity risk by insuring its pension liabilities near to or already in payment.

Canada Life continues to be a key player in the single premium investment bond marketplace. It will continue to develop its presence in both the international and onshore market segments. The Company's distribution strategy for onshore will remain focused on financial advisors. In the international wealth management segment, the outlook for 2019 is cautiously optimistic with an expectation that the market will continue to grow. The majority of the Company's business growth is expected to be through discretionary fund management wealth advisors, the retail market and through tax and estate planning products.

The outlook for the group risk operation remains positive and has benefited from additional risk benefits as a result of the U.K. Government's Pensions Auto Enrollment initiative in the workplace, which commenced in October 2012 and completed in 2018. Larger Canada Life plans have grown, as the pension legislation increased the membership of the associated group plans. The Company expects the expansion of the existing customer base experienced in recent years will moderate as employers have implemented the changes required by the legislation. The Company's group operations will continue to maintain new pricing discipline, reflecting the current low interest rate environment.

The Company has seen market volatility as a result of the Brexit vote. It is anticipated that the current conditions will continue until further clarity is provided as to the details of the exit process and the ongoing relationship between the U.K. and the EU. This uncertainty is expected to continue into 2019.

Ireland **–** The Irish economy continues to perform strongly with expected gross domestic product (GDP) growth of 8.2% in 2018, followed by 4.2% growth in 2019. The 2019 economic forecast for growth is subject to the assumptions around the U.K.'s relationship with the EU. The uncertainty surrounding the impact that Brexit could have on Ireland is a key risk in the medium term. The labour market continues to expand with sustained job growth across sectors and regions, with the unemployment rate averaging 6% during 2018 before falling to 5% in 2019, compared to 15% in 2012. Consumer sentiment index is neutral but cautious, and has fallen slightly from recent peaks in January and July 2018. The declining unemployment rate is expected to influence retention and new business measures for the Company's Irish businesses.

Irish Life is looking to maintain market share and to improve profitability across its retail, corporate, health and investment management businesses following its multi-channel distribution strategy but continually faces the challenges of operating in a competitive market. The establishment of an Irish Life innovation centre, to embed collaborative and agile methodologies of high growth into the business, is expected to challenge existing methods and design new and more efficient business processes and customer offerings.

Germany **–** The outlook for the German business continues to be positive and the Company expects continued growth in assets under management and its share of the market during 2019. The Company is positioning itself to further strengthen its presence through continued investments in product development, distribution technology and service improvements.

Reinsurance

Operating Results

	For the three months ended			For the twelve months ended	
	Dec. 31 2018	Sept. 30 2018	Dec. 31 2017	**Dec. 31 2018**	Dec. 31 2017
Premiums and deposits	**$ 3,872**	$ 3,107	$ 2,995	**$ 13,504**	$ 12,729
Fee and other income	**3**	3	7	**13**	20
Net earnings	**89**	87	67	**377**	190

Premiums and deposits

Reinsurance premiums can vary significantly from period to period depending on the terms of underlying treaties. For certain life reinsurance transactions, premiums will vary based on the form of the transaction. Treaties where insurance contract liabilities are assumed on a proportionate basis will typically have significantly higher premiums than treaties where claims are not incurred by the reinsurer until a threshold is exceeded. Earnings are not directly correlated to premiums received.

Premiums and deposits for the fourth quarter of 2018 increased from $3.0 billion to $3.9 billion compared to the same quarter last year. The increase was primarily due to new reinsurance agreements, higher volumes relating to existing business and the impact of currency movement.

For the twelve months ended December 31, 2018, premiums and deposits increased by $0.8 billion to $13.5 billion compared to the same period last year, for the same reasons discussed for the in-quarter results.

Premiums and deposits for the fourth quarter of 2018 increased by $0.8 billion compared to the previous quarter, primarily due to the same reasons discussed for the in-quarter results.

Fee and other income

Fee and other income for the fourth quarter of 2018 decreased by $4 million to $3 million compared to the same period last year, primarily due to restructured reinsurance agreements.

For the twelve months ended December 31, 2018, fee and other income decreased by $7 million to $13 million compared to the same period last year, primarily due to the same reasons discussed for the in-quarter results.

Fee and other income for the fourth quarter of 2018 of $3 million was comparable to the previous quarter.

Net earnings

Net earnings for the fourth quarter of 2018 increased by $22 million to $89 million compared to the same quarter last year. The increase was primarily due to net favourable experience and higher business volumes, partially offset by lower contributions from insurance contract liability basis changes**.** During the quarter, a provision release relating to the impact of 2017 Atlantic hurricanes was mostly offset by an increase in provisions related to 2018 catastrophes.

For the twelve months ended December 31, 2018, net earnings increased by $187 million to $377 million compared to the same period last year. Included in the 2017 year-to-date results was a provision of $175 million related to the impact of 2017 Atlantic hurricane activity. Excluding this item, net earnings increased by $12 million, primarily due to net favourable experience, higher business volumes and higher contributions from insurance contract liability basis changes, partially offset by lower new business volumes. During 2018, a provision release relating to the impact of 2017 Atlantic hurricanes was mostly offset by an increase in provisions related to 2018 catastrophes. In addition, net earnings for the twelve months ended December 31, 2017 were more favourably impacted by changes to certain tax estimates.

Net earnings for the fourth quarter of 2018 increased by $2 million compared to the previous quarter. The increase was primarily due to higher business volumes and contributions from insurance contract liability basis changes, partially offset by less favourable experience.

Outlook – Reinsurance

Refer to Cautionary Note regarding Forward-looking Information and Cautionary Note regarding non-IFRS Financial Measures at the beginning of this document.

The U.S. life reinsurance industry is focused on accessing certain demographics, including the low to middle income families market. If the industry is successful, this could create renewed growth, otherwise expected sales and volume will remain stable. The current Presidential Administration in the U.S. has signaled the desire to repeal and replace the Affordable Care Act, and has launched legal challenges to the law that may result in significant changes. At this point, the Company cannot determine what the impact may be on the health reinsurance market. Effective in 2017, new U.S. regulatory rules (Principle-Based Reserving) affecting the calculation of statutory reserves were issued. These rules are to be implemented by 2020.

In Europe, Solvency II is expected to continue to be the main driver of the business in 2019 and beyond. The Company's reinsurance operation is prepared to help European clients and other affiliated companies meet the capital challenges and business opportunities arising from these regulatory changes.

2018 was another historically significant global catastrophe loss year with major events including hurricanes Florence and Michael, typhoons Trami and Jebi, Japanese floods and California wildfires. The Company expects 2019 retrocessional pricing to be generally flat with some modest premium increases. Insurance linked securities capacity is expected to be slightly down due to trapped collateral from 2017 and 2018 events. The Company's primary focus for 2019 will be to continue to support the core client base with prudent attachment levels and risk adjusted premiums.

Europe Corporate

The Europe Corporate account includes financing charges and the impact of certain non-continuing items as well as the results for the legacy international businesses.

In the fourth quarter of 2018, Europe Corporate had a net loss of $11 million compared to net earnings of $41 million for the same period last year. Net earnings for the fourth quarter of 2017 included the impact of U.S. tax reform, which was a net positive of $54 million, primarily related to a reduction of deferred tax liabilities in the Reinsurance business unit, and restructuring costs of $4 million related to Irish Life Health and Irish Life retail businesses. Excluding these items, the net loss of $11 million was comparable to the same quarter last year.

For the twelve months ended December 31, 2018, Europe Corporate had a net loss of $102 million compared to net earnings of $15 million for the same period last year. Included in the 2018 year-to-date results were $56 million of restructuring costs related to the U.K. operations compared to $23 million for the same period last year relating to Irish Life Health and the Irish Life retail businesses. Excluding these items and the impact of U.S. tax reform discussed for the in-quarter results, the adjusted net loss increased $30 million, primarily due to higher strategic and business development expenses and the less favourable impact of changes in certain income tax estimates.

For the three months ended December 31, 2018, Europe Corporate had a net loss of $11 million compared to a net loss of $64 million for the previous quarter as the third quarter 2018 results included restructuring costs of $56 million related to the U.K. operations.

Lifeco Corporate Operating Results

The Lifeco Corporate segment includes operating results for activities of Lifeco that are not associated with the major business units of the Company.

The net loss for the three months ended December 31, 2018 of $4 million decreased from a net loss of $6 million for the same period last year, primarily due to lower preferred share dividends and higher net investment income, partially offset by higher operating expenses. In 2018, preferred share dividends related to preferred shares issued in the second quarter of 2017 were allocated to the Canada segment.

For the twelve months ended December 31, 2018, Lifeco Corporate had a net loss of $13 million, a decrease from a net loss of $27 million for the same period last year, primarily due to the same reasons discussed for the in-quarter results.

The net loss for the three months ended December 31, 2018 of $4 million increased by $2 million compared to the previous quarter, primarily due to higher operating expenses, partially offset by higher net investment income.

Risk Management

Overview

As a diverse financial services company, the effective management of risk is integral to the success of the Company's business. The Company is committed to a comprehensive system of risk management, which is embedded across all business activities, operated through a three lines of defense organization and overseen by the Board of Directors. The Company's three lines of defense include business unit and support functions, control functions including the risk function and the Company's internal audit function. The Company has a prudent and measured approach to risk management. This approach is built on a strong risk culture and is guided by an integrated Enterprise Risk Management (ERM) Framework.

The Company's ERM Framework facilitates the alignment of business strategy with risk appetite, informs and improves the deployment of capital; and supports the identification, mitigation and management of exposure to possible losses and risks. The Company's Risk Function is responsible for the Risk Appetite Framework (RAF), the supporting risk policies and risk limit structure, and provides independent risk oversight across the Company's operations.

There are three main sections to this Risk Management disclosure: ERM Framework, Risk Management and Control Practices and Exposures and Sensitivities.

Enterprise Risk Management Framework

The Company's Board and Management Committees provide oversight of the ERM Framework which is comprised of five components: Risk Culture, Risk Governance, Risk Appetite Framework, Risk Processes and Risk Infrastructure & Policies.

Risk Culture

Risk culture is defined as the system of values and behaviours which reflect the Company's collective sense of responsibility to fulfill its policyholder promises and safeguard the Company's financial strength and reputation while growing shareholder value. This culture reflects the Company's commitment to placing the interests of its customers and the long-term strength of the Company at the centre of decision-making. The Company's culture emphasizes open communication, transparency and ethical behaviour.

This culture is instilled through a mindset of risk awareness as demonstrated by:

- Consistent tone from the Board of Directors and senior management in respect of behavioural and ethical expectations;
- Recognition that risk is inherent in the Company's business success and reflects opportunity when appropriately managed;
- Common commitment throughout the Company to the importance of continuous management of risk, including clear accountability for and ownership of specific risks and risk areas;
- Rewarding positive risk taking and management behaviours while challenging and remediating those that are inappropriate;
- Encouragement of risk event reporting and the presence of robust whistleblowing processes, actively seeking to learn from mistakes; and
- Recognition that risk management skills and knowledge are valued, encouraged and developed, throughout the Company and supported by a properly resourced Risk Function.

Risk Governance

Risk governance sets out the roles and responsibilities for the Board of Directors (Board) and Board Committees.

Board of Directors

The mandate of the Board, which it discharges directly or through one of its Committees, is to supervise the management of the business and affairs of the Company. The Board is ultimately accountable and responsible for the governance and oversight of risk throughout the Company. The Board annually approves the strategic goals, objectives, plans and initiatives for Lifeco and in so doing reviews the risks associated with Lifeco's diverse business, strategic goals and high priority initiatives. Key risk responsibilities include:

- Annually approving the RAF, ERM Policy and Own Risk and Solvency Assessment (ORSA) Report;
- Monitoring the implementation and maintenance by management of appropriate systems, policies, procedures and controls to manage the risks associated with the Company's businesses and operations;
- Annually approving Lifeco's business, financial and capital plans and monitoring the implementation by management thereof; and
- Periodically approving policies designed to support independence of the Internal Audit, Risk, Finance, Actuarial and Compliance oversight functions.

Risk Committee

The Risk Committee of the Board of Directors is responsible for assisting the Board with risk management oversight and governance throughout the Company. The Risk Committee's responsibilities include:

- Review and oversight of the ERM Policy and RAF;
- Review, approval and oversight of the credit, market, insurance, operational, conduct, strategic and other risk policies;
- Approval of the risk limit framework, associated risk limits and monitoring adherence to those limits;
- Approval of the organizational structure and resources of the risk management and compliance functions;
- Evaluation of the Company's risk culture;
- Discussion of the risks in aggregate and by type of risk;
- Review of the Risk Function reports including stress testing and Dynamic Capital Adequacy Testing (DCAT);
- Review of the ORSA Report;
- Review of the risk impact of business strategies, capital plans, financial plans and the new business initiatives;
- Review and assessment of the performance of the Company's Chief Risk Officer (CRO) and Chief Compliance Officer (CCO);
- Monitoring compliance with the Company's Code of Conduct;
- Periodic consideration and input regarding the relationships between risk and compensation; and
- Review and assessment of the effectiveness of risk management across the Company including processes to ensure effective identification, measurement, management, monitoring and reporting on significant current and emerging risks.

The Risk Committee is required to meet, at least annually, with the Audit Committee and with the Company's Chief Internal Auditor. Members of the Board Risk Committee are independent of management.

Audit Committee – The primary mandate of the Audit Committee is to review the financial statements of the Company and public disclosure documents containing financial information and to report on such review to the Board, to be satisfied that adequate procedures are in place for the review of the Company's public disclosure documents that contain financial information and to oversee the work and review the independence of the external auditor. The Audit Committee is also responsible for reviewing, evaluating and approving the internal control procedures that are implemented and maintained by management. The Audit Committee is required to meet, at least annually, with the Risk Committee.

Conduct Review Committee – The primary mandate of the Conduct Review Committee is to require management to establish satisfactory procedures for the consideration and approval of transactions with related parties, to review and, if deemed appropriate, to approve related party transactions in accordance with such procedures, and to recommend to the Board a code of conduct applicable to Directors, officers and employees of the Company.

Executive Committee – The primary mandate of the Executive Committee is to approve strategic goals and objectives for the Company, to review and approve, and to monitor the implementation of, the Company's annual business, financial and capital plans, to review the risks associated with the Company's diverse businesses, to approve disclosure policies, and to supervise the management of the business and affairs of the Company when the Board is not in session.

Governance and Nominating Committee – The primary mandate of the Governance and Nominating Committee is to oversee the Company's approach to governance matters, to recommend to the Board effective corporate governance policies and processes, to assess the effectiveness of the Board, of Board Committees and of the Directors and to recommend to the Board candidates for election as Directors and candidates for appointment to Board Committees.

Human Resources Committee – The primary mandate of the Human Resources Committee is to support the Board in its oversight of compensation, talent management and succession planning. This includes the responsibility to approve compensation policies, to review the designs of major compensation programs, to approve compensation arrangements for senior executives of the Company and to recommend to the Board compensation arrangements for the Directors and for the President and Chief Executive Officer. The mandate also includes the responsibility to review succession plans for the President and Chief Executive Officer and other senior executives, to review talent management programs and initiatives and to review the leadership capabilities required to support the advancement of the Company's strategic objectives. The Human Resources Committee is also responsible for considering the implications of the risks associated with the Company's compensation policies, plans and practices. The Human Resources Committee meets with the Risk Committee annually.

Investment Committee – The primary mandate of the Investment Committee is to oversee the Company's global investment strategy and activities, including approving the Company's investment policy and monitoring the Company's compliance with the investment policy. The mandate also includes reviewing, the Company's annual investment plan and monitoring emerging risks, market trends and performance, investment regulatory issues and any other matters relevant to the oversight of the Company's global investment function.

Senior Management Risk Committees

The Executive Risk Management Committee (ERMC) is the primary senior management committee that oversees all forms of risk and the implementation of the ERM Framework. The members are the CEO, the heads of each major Business Segment, the heads of the oversight functions and heads of support functions as appropriate. The Board Risk Committee delegates authority for the approval and management of lower level risk limits to the ERMC. The Company's CRO leads the Risk Function and chairs the ERMC. Its responsibilities include reviewing compliance with the RAF, risk policies and risk standards. It also assesses the risk impact of business strategies, capital and financial plans, and material initiatives. The following four enterprise-wide sub-committees, chaired by the Risk Function, report to the ERMC to provide advice and recommendations on each of the key risk categories:

- Market Risk Committee
- Credit Risk Management Committee
- Insurance Risk Committee
- Operational Risk Committee

The oversight responsibilities of the above committees include identification, measurement, management, monitoring and reporting of their respective risks.

Accountabilities

The Company has adopted a three lines of defense model to clearly segregate risk management and risk oversight responsibilities and applies the ERM Framework rigorously across the enterprise:

- **First Line:** Business units and business support functions, including Investment Management, Human Resources, Information Services and Legal, have primary responsibility for identifying and managing the risks inherent in the products, activities, processes and systems for which they are accountable;
- **Second Line:** The Risk Function has overall responsibility for independent risk oversight and governance through developing and implementing the ERM framework. In this role, the Risk Function receives support from other control functions including Actuarial, Compliance and Finance; and
- **Third Line:** Internal Audit is responsible for independently assessing the adequacy of the design and operational effectiveness of the Company's ERM Framework.

The Company's CRO reports directly, both to the President and Chief Executive Officer and to the Board Risk Committee. The CRO is responsible for ensuring that the Risk Function is appropriately resourced and effective in executing its responsibilities. The accountabilities of the CRO include reporting on compliance with the ERM Policy and RAF as well as for escalating matters that require attention.

Regional ERMCs monitor all risk categories for businesses and operations within their respective business segments. Risk resources and capabilities are aligned with the Company's business segments and operating units. Further support is provided by centrally based risk areas of expertise.

Although the Company takes steps to anticipate and minimize risks in general, no risk management framework can guarantee that all risks will be identified, appreciated or mitigated effectively. Unforeseen future events may have a negative impact on the Company's business, financial condition and results of operations.

Risk Appetite Framework

The Company has an articulated Risk Appetite Framework (RAF) that includes the following elements along with the associated governance structure:

- **Risk Strategy:** Risk philosophy of the Company that links to the business strategy
- **Risk Appetite Statement:** Qualitative reflection of the aggregate level of risk and types of risk that the Company is willing to accept to achieve its business objective
- **Risk Preference:** Qualitative description of risk tolerances
- **Risk Limit Framework:** Quantitative components of the RAF including breach and escalation process

Risk Strategy

The Company's business strategy is aligned with its risk strategy and risk appetite. The risk strategy supports the Company's main objectives to keep its commitments while growing shareholder value. The risk strategy requires:

- diversification of products and services, customers, distribution channels and geographies;
- a prudent and measured approach to risk-taking,
- resilience of business operations and sustainable growth,
- conducting business to safeguard the Company's reputation and deliver fair customer outcomes, and
- generating returns to grow shareholder value through profitable and growing operations while maintaining a strong balance sheet.

Risk Appetite Statement

The Company's Risk Appetite Statement has four key components:

- **Strong Capital Position:** The Company intends to maintain a strong balance sheet and not take risks that would jeopardize its financial strength;
- **Mitigated Earnings Volatility:** The Company seeks to avoid substantial earnings shortfalls through appropriate diversification and limiting exposure to more volatile lines of business;
- **Strong Liquidity:** The Company intends to maintain a high quality, diversified investment portfolio with sufficient liquidity to meet the demands of policyholder and financing obligations under normal and stressed conditions; and
- **Reputation and Conduct:** The Company considers, across all business activities and operations, the potential impact on its reputation. This includes building and maintaining trust with the Company's customers and full consideration of sustainability risks.

Risk Preference

The Company has established qualitative risk preferences for each risk type. The current level of exposure is regularly measured and risk tolerances are expressed quantitatively through actual constraints to the Company's risk profile within pre-agreed limits. Each risk is assigned a risk preference level, in the context of understanding and managing these risks. Maximum guidelines are established to monitor risk concentration and inform the risk limit setting process.

Risk Limit Framework

A comprehensive structure of risk limits and controls is in place across the Company. Enterprise risk limits are further broken down by business unit and risk type. The limit structure is accompanied by comprehensive limit approval and breach management processes to ensure effective governance and oversight of the RAF.

The Company and its subsidiaries are subject to various regulatory regimes. The capital requirements under these regulatory capital regimes are reflected in the development of risk limits. Business units are responsible for operating within the risk appetite and the risk limit framework and satisfying local needs as required.

Risk Processes

Risk processes follow a cycle of identification, measurement, management, monitoring and reporting and are designed to ensure both current and emerging risks are assessed against the RAF.

Risk Identification, Measurement and Management

Risk identification requires the structured analysis of the current and emerging risks facing the Company, so that they are understood and appropriately controlled. Processes are designed to ensure risks are considered, assessed, prioritized and addressed in all business initiatives and changes, including investment strategies, product design, significant transactions, annual planning and budgeting as well as potential business acquisitions and disposals.

Risk measurement provides the means to quantify and assess the Company's risk profile and monitor the profile against the risk limits. Any material new business development or change in strategy warrants an independent assessment of risk and potential impact on reputation, in addition to measurement of the impact on capital, earnings and liquidity. Stress and scenario testing is used to evaluate risk exposures against the risk appetite. Sensitivity testing of key risks is used to evaluate the impact of risk exposures independent of other risks. Scenario testing is used to evaluate the combined impact of multiple risk exposures.

The Company has processes in place to identify risk exposures on an ongoing basis and, where appropriate, develops mitigation strategies to proactively manage these risks. Effective risk management requires the selection and implementation of approaches to accept, reject, transfer, avoid or control risk, including mitigation plans. It is based on a control framework that includes risk limits, key risk indicators and stress and scenario testing to ensure appropriate escalation and resolution of potential issues in a timely manner.

A key responsibility of the Risk Function is to ensure that the risk appetite is applied consistently across the Company and that limits are established to ensure that risk exposures comply with the risk appetite and Company-wide risk policies.

Risk Monitoring, Reporting and Escalation

Risk monitoring relates to ongoing oversight and tracking of the Company's risk exposures, ensuring that the risk management approaches in place remain effective. Monitoring may also identify risk-taking opportunities.

Risk reporting presents an accurate and timely picture of existing and emerging risk issues and exposures as well as their potential impact on business activities. Reporting highlights the risk profile relative to the risk appetite and associated risk limits.

A clearly defined escalation protocol has been established in respect of breaches of the RAF, risk policies, operating standards and guidelines. Remediation plans are reviewed by the Risk Function and escalated to designated management and Board committees.

Risk Infrastructure and Policies

The Company's organization and infrastructure is established to provide resources and risk systems to support adequate and appropriate risk policies, operating standards and guidelines and processes. The Company takes a consistent approach to risk management is taken across key risk types.

The Company has codified its procedures and operations related to risk management and oversight requirements in a set of guiding documents composed of risk policies, operating standards and associated guidelines. This comprehensive documentation framework provides detailed and effective guidance across all risk management processes. These documents enable a consistent approach to risk management and oversight across the Company's businesses and are reviewed and approved regularly, in accordance with an established authority hierarchy, by the Board of Directors, the Board Risk Committee or a senior management committee. Similar policy structures have been developed and are maintained by each region.

Risk Management and Control Practices

The Company's risk profile is impacted by a variety of risks and its risk management and independent oversight processes are tailored to the type, volatility and magnitude of each risk. The Company has defined specific risk management and oversight processes for risks, broadly grouped in the following categories:

1. Market and Liquidity Risk
2. Credit Risk
3. Insurance Risk
4. Operational Risk
5. Conduct Risk
6. Strategic Risk

Market and Liquidity Risk

Risk Description

Market risk is the risk of loss resulting from potential changes in market rates, prices or liquidity in various markets such as for interest rates, real estate, currency, common shares and commodities. Exposure to this risk results from business activities including investment transactions which create on-balance sheet and off-balance sheet positions.

Market and Liquidity Risk Management

The Company's market risk policy sets out the market risk management framework and provides the principles for market risk management. This policy is supported by other policies and guidelines that provide detailed guidance.

A governance structure has been implemented for the management of market risk. The business units, including Investment Management, are the ultimate owners of market risk and as such have primary responsibility for the identification, measurement, management, monitoring and reporting of market risk. The Company has established a senior management committee to provide oversight of market risk, which includes completing reviews and making recommendations regarding risk limits, the risk policy and associated compliance, breach management and mitigation pertaining to market risk. Each region has established oversight committees and operating committees to help manage market risk within the region. The Company has developed risk limits, key risk indicators and measures to support the management of market and liquidity risk in compliance with the Company's RAF. The Risk Function works with the business units and other oversight functions to identify current and emerging market risks and take appropriate action, if required.

The Company is willing to accept market risk and liquidity risk in certain circumstances as a consequence of its business model and seeks to mitigate the risk wherever practical, for example through the immunization of the assets and liabilities, either directly or indirectly (e.g. using derivatives). To reduce market risk, the Company uses a dynamic hedging program associated with segregated fund and variable annuity guarantees. This is supplemented by a general macro equity hedging program.

Risks and risk management activities associated with the broad market and liquidity risk categories are detailed below.

Interest Rate Risk

Interest rate risk is the risk of loss resulting from the effect of the volatility and uncertainty of future interest rates on asset cash flows relative to liability cash flows and on assets backing surplus. This also includes changes in the amount and timing of cash flows related to asset and liability optionality, including interest rate guarantees and book value surrender benefits in the liabilities.

The Company's principal exposure to interest rate risk arises from certain general fund and segregated fund products. The Company's Asset Liability Management (ALM) strategy has been designed to mitigate interest rate risks associated with general fund products, with close matching of asset cash flows and insurance and investment contract obligations. Products with similar risk characteristics are grouped together to ensure an effective aggregation and management of the Company's ALM positions. Asset portfolios supporting insurance and investment contract liabilities are segmented to align with the duration and other characteristics (e.g. liquidity) of the associated liabilities.

Crediting rates within general fund products are set prudently and a significant proportion of the Company's portfolio of crediting rate products includes pass-through features, which allow for the risk and returns to be shared with policyholders. Asset management and related products permit redemptions; however, the Company attempts to mitigate this risk by establishing long-term customer relationships, built on a strategic customer focus and an emphasis on delivering strong fund performance.

The Company has established dynamic hedging programs to hedge interest rate risk sensitivity associated with segregated fund and variable annuity guarantees. These hedging programs are designed to offset changes in the economic value of liabilities using derivative instruments. The Company's approach to dynamic hedging of interest rate risk principally involves transacting in interest rate swaps. The hedge asset portfolios are dynamically rebalanced within approved thresholds and rebalancing criteria.

Where the Company's insurance and investment products have benefit or expense payments that are dependent on inflation (e.g. inflation-indexed annuities, pensions and disability claims), the Company generally invests in real return instruments to mitigate changes in the real dollar liability cash flows. Some protection against changes in the inflation index can be achieved, as any related change in the fair value of the assets will be largely offset by a similar change in the fair value of the liabilities.

Equity Risk

Equity risk is the risk of loss resulting from the sensitivity of the value of assets, liabilities, financial instruments and fee revenue to changes in the level or in the volatility of market prices of common shares and real estate. This includes the risk associated with the Company's general fund assets and investments on account of segregated fund policyholders.

The Company's principal exposure to equity risk arises from segregated funds and fee income associated with the Company's assets under management. Approved investment and risk policies also provide for general fund investments in equity markets within defined limits.

The Company has established dynamic hedging programs to hedge equity risk sensitivity associated with segregated fund and variable annuity guarantees. The hedging programs are designed to mitigate exposure to changes in the economic value of these liabilities using derivative instruments. The Company's approach to dynamic hedging of equity risk principally involves the short selling of equity index futures. The hedge asset portfolios are dynamically rebalanced within approved thresholds and rebalancing criteria. The Company's product-level hedging programs are supplemented by a general macro hedging strategy.

For certain very long-dated liabilities it is not practical or efficient to closely match liability cash flows with fixed-income investments. Therefore, certain long-dated asset portfolios target an investment return sufficient to meet liability cash flows over the longer term. These liabilities are partially backed by a diversified portfolio of non-fixed income investments, including equity and real estate investments, in addition to long dated fixed-income instruments that provide duration.

The Company has established a macro equity hedging program. The objective of the program is to reduce the Company's exposure to equity tail-risk and to maintain overall capital sensitivity to equity market movements within Board approved risk appetite limits. The program is designed to hedge a portion of the Company's capital sensitivity due to movements in equity markets arising from sources outside of dynamically hedged segregated fund and variable annuity exposures.

Foreign Exchange Risk

Foreign exchange risk is the risk of loss resulting from changes in currency exchange rates against the reporting currency. The Company's foreign exchange investment and risk management policies and practices are to match the currency of the Company's general fund investments with the currency of the underlying insurance and investment contract liabilities. To enhance portfolio diversification and improve asset liability matching, the Company may use foreign exchange derivatives to mitigate currency exchange risk to the extent this is practical using forward contracts and swaps.

The Company has net investments in foreign operations. As a result, the Company's revenue, expenses and income denominated in currencies other than the Canadian dollar are subject to fluctuations due to the movement of the Canadian dollar against these currencies. Such fluctuations affect the Company's financial results. The Company has exposures to the U.S. dollar resulting from the operations of Great-West Financial and Putnam in the United States segment and the Reinsurance business unit within the Europe segment; and to the British pound and the euro resulting from operations of business units within the Europe segment operating in the U.K., the Isle of Man, Ireland and Germany.

In accordance with IFRS, foreign currency translation gains and losses from net investments in foreign operations, net of related hedging activities and tax effects, are recorded in accumulated other comprehensive income (loss). Strengthening or weakening of the Canadian dollar end-of-period market rate compared to the U.S. dollar, British pound and euro end-of-period market rates impacts the Company's total share capital and surplus. Correspondingly, the Company's book value per share and capital ratios monitored by rating agencies are also impacted.

- A 5% appreciation (depreciation) of the average exchange rate of the Canadian dollar to each of the U.S. dollar, British pound and euro would decrease (increase) net earnings in 2018 by $31 million, $35 million and $26 million, respectively.
- A 5% appreciation (depreciation) of the Canadian dollar end-of-period market rate compared to each of the U.S. dollar, British pound and euro end-of-period market rates would decrease (increase) the unrealized foreign currency translation gains, including the impact of instruments designated as hedges of net investments on foreign operations, in accumulated other comprehensive income (loss) of shareholders' equity by approximately $346 million, $332 million and $135 million, respectively, as at December 31, 2018.

Management may use forward foreign currency contracts and foreign denominated debt to mitigate the volatility arising from the movement of rates as they impact the translation of net investments in foreign operations. The Company uses non-IFRS financial measures such as constant currency calculations to assist in communicating the effect of currency translation fluctuation on financial results.

Liquidity Risk

Liquidity risk is the risk of the Company's inability to generate the necessary funds to meet its obligations as they come due, including off-balance sheet commitments and obligations.

The Company's liquidity risk framework and associated limits are designed to ensure that the Company can meet cash and collateral commitments as they fall due, both on an expected basis and under a severe liquidity stress.

In the normal course of certain Reinsurance business, the Company provides Letters of Credit (LCs) to other parties, or beneficiaries. A beneficiary will typically hold a LC as collateral to secure statutory credit for insurance and investment contract liabilities ceded to or amounts due from the Company.

The Company may be required to seek collateral alternatives if it is unable to renew existing LCs at maturity. The Company monitors its use of LCs on a regular basis and assesses the ongoing availability of these and alternative forms of operating credit. The Company has contractual rights to reduce the amount of LCs issued to the LC beneficiaries for certain reinsurance treaties. The Company staggers the maturities of LCs to reduce the renewal risk.

Liquidity

	December 31	
	2018	2017
Cash, cash equivalents and short-term bonds	**$ 7,795**	$ 7,309
Other liquid assets and marketable securities		
Government bonds	**33,443**	36,566
Corporate bonds	**46,378**	44,573
Common/Preferred shares (public)	**8,873**	8,465
Residential mortgages – insured	**4,530**	4,205
	$ 93,224	$ 93,809
Total	**$101,019**	$101,118

Cashable liability characteristics

	December 31	
	2018	2017
Surrenderable insurance and investment contract liabilities (1)		
At market value	**$ 21,202**	$ 19,886
At book value	**54,798**	51,712
Total	**$ 76,000**	$ 71,598

(1) Cashable liabilities include insurance and investment contract liabilities classified as held for sale.

The carrying value of the Company's liquid assets and marketable securities is approximately $101.0 billion or 1.3 times the Company's surrenderable insurance and investment contract liabilities. The Company believes that it holds adequate and appropriate liquid assets to meet anticipated cash flow requirements as well as to meet cash flow needs under a severe liquidity stress.

The majority of liquid assets and other marketable securities comprise fixed-income securities whose value is inversely related to interest rates. Consequently, a significant rise in prevailing interest rates would result in a decrease in the value of this pool of liquid assets. Also, a high interest rate environment may encourage holders of certain types of policies to terminate their policies, thereby placing demands on the Company's liquidity position.

For a further description of the Company's financial instrument risk management policies, refer to note 9 in the Company's December 31, 2018 annual consolidated financial statements.

Credit Risk

Risk Description

Credit risk is the risk of loss resulting from an obligor's potential inability or unwillingness to fully meet its contractual obligations. Exposure to this risk occurs any time funds are extended, committed or invested through actual or implied contractual agreements. Components of credit risk include: loan loss/principal risk, pre-settlement/replacement risk and settlement risk. Obligors include issuers, debtors, borrowers, brokers, policyholders, reinsurers, derivative counterparties and guarantors.

Credit exposure resulting from the purchase of fixed-income securities, which are primarily used to support policyholder liabilities, is a core business risk that is appropriately factored into the Company's risk appetite. The Company manages financial contracts with counterparties which may result in counterparty credit risk related to the mitigation of insurance risk, through reinsurance agreements, and market risk, through derivative contracts. Credit risk arising from both sources is included in the Company's measurement of its credit risk profile.

Credit Risk Management

The Company's credit risk management framework focuses on minimizing undue concentration to issuers, connected companies, industries or individual geographies by emphasizing diversification. Diversification is achieved through the establishment of appropriate limits and transaction approval authority protocols. The Company's approach to credit risk management includes the continuous review of its existing risk profile relative to the RAF as well as to the projection of potential changes in the risk profile under stress scenarios.

Effective governance of credit risk management requires the involvement of dedicated senior management committees, experienced credit risk personnel, and with the guidance of appropriate credit risk policies, standards and processes. For credit risk, the Investment Committee of the Board of Directors (Investment Committee) is responsible for the approval of investment decisions of significant size or level of complexity, and oversight of the Company's global investment strategy, including compliance with investment limits and policies as well as breach management. Additionally, the Investment Committee reviews the Company's investment policies, procedures, guidelines, and corresponding limits to ensure that investment decisions are in compliance with the Company's RAF. The Risk Committee advises the Board of Directors on credit risk oversight matters and approves and monitors compliance with credit risk policies and limits. The Risk Committee also provides oversight of the Credit Risk Management Policy and related processes, and is responsible for ensuring compliance with the Company's RAF.

The Investment Committee and Risk Committee are supported by senior management committees. The Global Management Investment Review Committee (GMIRC) and the Management Investment Review Committees (MIRCs) for each regional business segment review and approve new investments above the transaction approval authority delegated to management and manage credit risk across invested assets and counterparties. The Credit Risk Management Committee (CRMC), is the ERMC sub-committee responsible for providing global oversight of credit risk management activities, including credit risk limit approval and breach management processes, and credit risk policy compliance.

The Company has established business-segment specific Investment and Lending Policies, including investment limits for each asset class, which are approved by the Investment Committee. These policies and limits are complemented by the Credit Risk Policy which describes credit risk management processes and identifies the role of the Risk Function in the oversight of credit risk, including the setting and monitoring of aggregate risk limits, and the approval and escalation of exceptions.

The Company identifies credit risk through an internal credit risk rating system which includes a detailed assessment of an obligor's creditworthiness based on a thorough and objective analysis of business risk, financial profile, structural considerations and security characteristics including seniority and covenants. Credit risk ratings are expressed using a 22-point scale that is consistent with those used by external rating agencies. In accordance with the Company's policies, internal credit risk ratings cannot be higher than the highest rating provided by certain independent ratings companies. The Risk Function reviews and approves the credit risk ratings assigned by Investment Management for all new investments, and reviews the appropriateness of ratings assigned to outstanding exposures.

The Risk Function assigns credit risk parameters (probabilities of default, rating transition rates, loss given default, exposures at default) to all credit exposures to measure the Company's aggregate credit risk profile. In addition, the Risk Function establishes limits and processes, performs stress and scenario testing (using stochastically generated and deterministic scenarios) and assesses compliance with the limits established in the RAF. It regularly reports on the Company's credit risk profile to executive management, the Board of Directors and various committees at enterprise, regional and legal entity levels.

Investment Management and the Risk Function are independently responsible for the monitoring of exposures relative to limits as well as for the management and escalation of risk limit breaches as they occur. The Investment Management Function is also responsible for the continuous monitoring of its portfolios for changes in credit outlook, and performs regular credit reviews of all relevant obligors and counterparties, based on a combination of bottom-up credit analysis and top-down views on the economy and assessment of industry and sub-sector outlooks. Watch Lists are also used at the regional business segment levels to plan and execute the relevant risk mitigation strategies.

The Risk Function oversees monitoring, breach management and escalation activities, and has developed risk limits, key risk indicators (KRIs) and risk budgets to act as early warnings against unacceptable levels of concentration and to support the management of credit risk limits in compliance with the Company's RAF.

Counterparty Risk

Counterparties include both reinsurers and derivative counterparties.

The Company uses reinsurance to mitigate insurance risks. This mitigation results in increased credit risk to reinsurance counterparties from the potential failure to collect reinsurance recoveries due to either the inability, or an unwillingness to fulfill their contractual obligation.

Counterparties providing reinsurance to the Company are reviewed for financial soundness as part of an ongoing monitoring process. The minimum financial strength of reinsurers is outlined in the Reinsurance Risk Management Policy. The Company seeks to minimize reinsurance credit risk by setting rating based limits on net ceded exposure by counterparty as well as seeking protection in the form of collateral or funds withheld arrangements where possible.

The Company enters into derivative contracts primarily to mitigate market risks. Derivative counterparty risk is the risk of loss resulting from the potential failure of the derivative counterparty to meet their financial obligations under the contract. Derivative products are traded through exchanges or with counterparties approved by the Board of Directors or the Investment Committee. The Company seeks to mitigate derivative credit risk by setting rating based counterparty limits in its investment policies and through collateral arrangements where possible. In addition, the Company includes potential future exposure of derivatives in its measure of total exposure against single name limits.

INSURANCE RISK

RISK DESCRIPTION

Insurance risk is the risk of loss resulting from adverse changes in experience associated with contractual promises and obligations arising from insurance contracts. Insurance risk includes uncertainties around the ultimate amount of net cash flows (premiums, commissions, claims, payouts and related settlement expenses), the timing of the receipt and payment of these cash flows, as well as the impact of policyholder behaviour (e.g. lapses).

The Company identifies six broad categories of insurance risk, which may contribute to financial losses: mortality risk, morbidity risk, longevity risk, lapse risk, expense risk and property catastrophe risk. Mortality risk, morbidity risk and longevity risk are core business risks and the exchange of these risks into value is a core business activity. Lapse risk and expense risk associated with offering core products are accepted as a consequence of the business model and mitigated where appropriate. Property catastrophe risk is a selectively accepted business risk which is constrained, actively managed and controlled within risk limits.

INSURANCE RISK MANAGEMENT

Insurance products involve commitments by the insurer to provide services and financial obligations with coverage for extended periods of time. To provide insurance protection effectively, the insurer must design and price products so that the premiums received, and the investment income earned on those premiums, will be sufficient to pay future claims and expenses associated with the product. This requires the insurer, in pricing products and establishing insurance contract liabilities, to make assumptions regarding expected levels of income, claims and expenses and how policyholder behaviours and market risks might impact these assumptions. Insurance contract liability valuation requires regular updating of assumptions to reflect emerging experience. Insurance contract liabilities are established to fund future claims and include a provision for adverse deviation, set in accordance with professional actuarial standards.

A governance structure has been implemented for the management of insurance risk. Business units are the ultimate owners of insurance risk and as such have primary responsibility for the identification, measurement, management, monitoring and reporting of insurance risk. The Risk function, supported by Corporate Actuarial, is primarily responsible for oversight of the insurance risk management framework. The Company has established an Insurance Risk Committee to provide oversight of insurance risk, which includes completing reviews and making recommendations regarding risk limits, the risk policy and associated compliance, breach management and mitigation pertaining to insurance risk. Each region has established oversight committees and operating committees to help manage insurance risk within the region.

The Company's Insurance Risk Policy sets out the insurance risk management framework and provides the principles for insurance risk management. This policy is supported by several other policies and guidelines that provide detailed guidance, including:

- Product Design and Pricing Risk Management Policy and Reinsurance Risk Management Policy, which provide guidelines and standards for the product design and pricing risk management processes and reinsurance ceded risk management practices;
- Corporate Actuarial Valuation Policy, which provides documentation and control standards consistent with the valuation standards of the Canadian Institute of Actuaries; and
- Participating Account Management Policies and Participating Policyholder Dividend Policies, which govern the management of participating accounts and provide for the distribution of a portion of the earnings in the participating account as participating policyholder dividends.

The Risk Function in conjunction with Corporate Actuarial implements a number of processes to carry out its responsibility for oversight of insurance risk. It reviews the Insurance Risk Policy relative to current risk exposures and updates it as required. It reviews insurance risk management processes carried out by the business units, including product design and pricing, underwriting, claims adjudication, and reinsurance ceding, and provides challenge as required. The Risk Function works with the business units and other oversight functions to identify current and emerging insurance risks and take appropriate action, if required. Insurance risk limits, risk budgets and key risk indicators are set to keep the insurance risk profile within the Company's appetite for insurance risk and the Risk Function regularly monitors the insurance risk profile relative to these measures. Any breaches are required to be escalated so that appropriate remediation may be implemented. The Risk Function performs stress testing and does analysis of insurance risks, including review of experience studies. It provides regular reporting on these activities to the business units, senior management, and risk oversight committees.

Risks and risk management activities associated with the broad insurance risk categories are detailed below.

Mortality and Morbidity Risk

Mortality risk is the risk of loss resulting from adverse changes in the level, trend, or volatility of mortality rates, where an increase in the mortality rate leads to an increase in the value of insurance contract liabilities.

Morbidity risk is the risk of loss resulting from adverse changes in the level, trend, or volatility of disability, health, dental, critical illness and other sickness rates, where an increase in the incidence rate or a decrease in the disability recovery rate leads to an increase in the value of insurance contract liabilities.

There is a risk that the Company will mis-estimate the level of mortality or morbidity, or accept customers who generate worse mortality and morbidity experience than expected.

The Company employs the following practices to manage its mortality and morbidity risk:

- Research and analysis is done regularly to provide the basis for pricing and valuation assumptions to properly reflect the insurance and reinsurance risks in markets where the Company is active.
- Underwriting limits, practices and policies control the amount of risk exposure, the selection of risks insured for consistency with claims expectations and support the long-term sustainability of the Company.
- The insurance contract liabilities established to fund future claims include a provision for adverse deviation, set in accordance with professional standards. This margin is required to provide for the possibilities of mis-estimation of the best estimate and/or future deterioration in the best estimate assumptions.
- The Company sets retention limits for mortality and morbidity risks. Aggregate risk is managed through a combination of reinsurance and capital market solutions to transfer the risk where appropriate.
- For Group life products, exposure to a concentrated mortality event due to concentration of risk in specific locations for example, could have an impact on financial results. To manage the risk, concentrations are monitored for new business and renewals. The Company may impose single-event limits on some group plans and declines to quote in localized areas where the aggregate risk is deemed excessive.
- Effective plan design and claims adjudication practices, for both morbidity and mortality risks are critical to the management of the risk. As an example, for Group healthcare products, inflation and utilization will influence the level of claims costs, which can be difficult to predict. The Company manages the impact of these and similar factors through plan designs that limit new costs and long-term price guarantees and include the ability to regularly re-price for emerging experience.
- The Company manages large blocks of business, which, in aggregate, are expected to result in relatively low statistical fluctuations in any given period. For some policies, these risks are shared with the policyholder through adjustments to future policyholder charges or in the case of participating policies through future changes in policyholder dividends.

Longevity Risk

Longevity risk is the risk of loss resulting from adverse changes in the level, trend, or volatility of mortality rates, where a decrease in the mortality rate leads to an increase in the value of insurance contract liabilities. Annuities and some segregated fund products with Guaranteed Minimum Withdrawal Benefits are priced and valued to reflect the life expectancy of the annuitant. There is a risk that annuitants could live longer than was estimated by the Company, which would increase the value of the associated insurance contract liabilities.

Business is priced using mortality assumptions which consider recent Company and industry experience and the latest research on expected future trends in mortality.

Aggregate risk is managed through a combination of reinsurance and capital market solutions to transfer the risk as appropriate. The Company has processes in place to verify annuitants' eligibility for continued income benefits. These processes are designed to ensure annuity payments accrue to those contractually entitled to receive them and help ensure mortality data used to develop pricing and valuation assumptions is as complete as possible.

Lapse Risk

Lapse risk is the risk of loss resulting from adverse changes in the level or volatility of the rates of policy lapses, terminations, renewals and/or surrenders.

Many products are priced and valued to reflect the expected duration of contracts. There is a risk that the contract may be terminated before expenses can be recovered, to the extent that higher costs are incurred in early contract years. Risk also exists where the contract is terminated later than assumed, on certain long-term level premium products where costs increase by age.

Business is priced using policy termination assumptions which consider product designs and policyholder options, recent Company and industry experience and the latest research on expected future trends. Assumptions are reviewed regularly and are updated for new policies as necessary.

The Company also incorporates early surrender charges into certain contracts and incorporates commission chargebacks in its distribution agreements to reduce unrecovered expenses.

Policyholder taxation rules in many jurisdictions help encourage the retention of insurance coverage.

Expense Risk

Expense risk is the risk of loss resulting from adverse variability of expenses incurred with fee-for-service business or in servicing and maintaining insurance, savings or reinsurance contracts, including direct expenses and allocations of overhead costs.

Expense management programs are regularly monitored to control unit costs while maintaining effective service delivery.

Property Catastrophe Risk

Property catastrophe risk is the risk of loss resulting from adverse changes in property damage experience and is mainly related to extreme or catastrophic events.

The reinsurance business in particular has exposure to extreme or catastrophic events that result in property damage. As a retrocessionaire for property catastrophe risk, the Company generally participates at more remote event-loss exposures than primary carriers and reinsurers. Generally, an event of significant size must occur prior to the Company incurring a claim. The Company limits the total maximum claim amount under all property catastrophe contracts. The Company monitors cedant companies' claims experience and research from third party expert risk models on an ongoing basis and incorporates this information in pricing models to ensure that the premium is adequate for the risk undertaken.

Operational Risk

Risk Description

Operational Risk is the risk of loss arising from potential problems relating to internal processes, people and systems or from external events. Operational risk can result from either normal day-to-day operations or a specific unanticipated event. Operational risks include legal and regulatory, human resources, infrastructure, technology and cyber, business continuity, process, change, fraud and supplier risks. In addition to operational risks, the Company also manages reputational risk, which can emerge across many businesses and risk types; therefore, reputational considerations are incorporated within each aspect of the Company's business and risk management practices.

Operational Risk Management

While operational risks can be mitigated and managed, they remain an inherent feature of the business model, as multiple processes, systems, and stakeholders are required to interact across the enterprise on an ongoing basis. The Company actively manages operational risk across the enterprise to maintain a strong reputation and standing, maintain financial strength, protect customers and the Company's value. Ongoing engagement of businesses and support functions across the enterprise through robust training and communications is regularly undertaken for identifying, assessing and mitigating operational risk issues.

Operational risk management governance and oversight reflects a combined effort between business units and oversight functions. The Risk Function is responsible for the development of operational risk management policies and operating standards as well as overseeing operational risk management activities performed in the first line of defense. The Operational Risk Committee has the primary mandate to provide risk oversight for operational risk across the enterprise. In addition, each regional business segment has established committees to oversee operational risk management within their business.

The Company has an Operational Risk Policy that is supported by standards and guidelines that relate to specialized functions including detailed practices related to stress testing, modeling, fraud, regulatory compliance, information technology risk management and risk data aggregation & risk reporting. The Company implements controls to manage operational risk through integrated policies, procedures, processes and practices, with consideration given to the cost/benefit trade-off. Processes and controls are monitored and refined by the business areas and periodically reviewed by the Company's Internal Audit department. Financial reporting processes and controls are further examined by external auditors.

The Company also manages operational risks through the corporate insurance program which mitigates a portion of the operational risk exposure by purchasing insurance coverage that provides protection against unexpected material losses resulting from events such as property loss or damage and liability exposures. The nature and amount of insurance protection purchased is assessed with regard to the Company's risk profile, risk appetite and tolerance for the associated risks, as well as legal requirements and contractual obligations.

The Company employs a combination of operational risk management methods including risk and control assessments, internal control factors and risk events analyses. For the identification of operational risks, the Company utilizes risk and control assessments which systematically identify and assess potential operational risks and associated controls. Internal and external operational risk events are analyzed to identify root causes and provide insights into potential new operational risks that could impact the Company. In addition, scenario analysis is employed to identify and quantify potential severe operational risk exposures, while key risk indicators, risk appetite preferences, and other processes are leveraged to measure, manage and monitor operational risks.

The Risk Function monitors the status of actions being undertaken to remediate risks to ensure that risk exposures are mitigated in a timely manner. Processes are in place to escalate significant matters to senior management to inform and enable management to take appropriate action when needed. The Risk Function regularly reports on the Company's operational risk profile to executive management, the Board of Directors and various committees at enterprise, regional and legal entity levels.

Key operational risks and the Company's approach to managing them are outlined below.

Legal and Regulatory Risk

Legal and regulatory risk is the risk of loss resulting from non-compliance with specific local or international rules, laws, and regulations, prescribed practices, or ethical standards as well as civil or criminal litigation involving the Company. As a multi-national company, the Company and certain of its subsidiaries are subject to extensive legal and regulatory requirements in Canada, the U.S., the U.K., Ireland, Germany and other jurisdictions. These requirements cover most aspects of the Company's operations including capital adequacy, privacy, liquidity and solvency, investments, the sale and marketing of insurance and wealth products, the business conduct of insurers, asset managers and investment advisors as well as reinsurance processes. Material changes in the legal or regulatory framework or the failure to comply with legal and regulatory requirements could have a material adverse effect on the Company. An increase in the pace of regulatory change could lead to increased operational costs to implement changes and ensure ongoing compliance.

Legal and regulatory risk is managed through coordination between first and second line of defense functions. The Company records, manages and monitors the regulatory compliance environment closely, using the subject matter expertise of both local and enterprise-wide Compliance and Legal stakeholders and reporting on emerging changes that could have a significant impact on the Company's operations or business.

Human Resources Risk

Human Resources risk is the risk of loss resulting from the company's inability to attract, retain, train and develop the right talent from inadequate succession planning, ineffective governance practices or legal action related to discrimination, and can impact the ability of the Company to meet its business objectives. The Company has compensation programs, succession planning, talent management and employee engagement processes that are designed to manage these risks, support a high performance culture and maintain a highly skilled workforce that is reflective of the diverse cultures and practices of the countries in which the Company operates. The Company's ability to recognize and accommodate changing trends with respect to human resources in the industry is important to execute upon business strategies.

Infrastructure Risk

Infrastructure risk is the risk of loss resulting from the reduction or non-availability of any aspect of a fully functioning business environment. This includes corporate facilities, physical assets, human resources and/or technology (technology assets, systems, applications, cloud computing), security (logical, physical and cyber), failures in license management and insufficient software/application support.

The ability to consistently and reliably obtain securities pricing information, accurately process client transactions and provide reports and other customer services is essential to the Company's operations. A failure of any of these services could have an adverse effect on the Company's results of operations and financial condition and could lead to loss of customer confidence, breach of regulatory requirements, harm to the Company's reputation, exposure to disciplinary action and liability to the Company's customers.

The Company invests in and manages infrastructure that is designed to be sustainable and effective in meeting the Company's needs for a fully functioning and secure business operation that protects assets and stakeholder value. Infrastructure risk management programs include strong business continuity capabilities across the enterprise to manage incidents or outages and the recovery of critical functions in the event of a disaster. In addition, security measures are designed to deny unauthorized access to facilities, equipment and resources, and to protect personnel and property from damage or harm (such as espionage, theft or terrorist attacks) and events that could cause serious losses or damage.

Technology and Cyber Risk

Technology and cyber risk is the risk of loss resulting from a purposeful or accidental event related to the use of technology. It includes the risk of cyber-attack that leads to unplanned outages, unauthorized access, or unplanned disclosure of confidential or restricted information. Technology risk also includes the risk of a deterioration in the reliability and availability of internal, customer-facing, or vendor-supported applications, infrastructure systems and/or services.

The nature of advancing technology introduces uncertainty as to how the insurance industry will evolve. Cloud services, which are being adopted by the Company to improve systems flexibility and information security, require scrutiny as digital supply chains grow in complexity.

Technology is a critical component of the Company's business operations and is also central to the Company's customer-focused digital strategy. The Company continues to face technology and cyber risks stemming from legacy technology constraints and the advancement of techniques used in cyber-attacks.

The Company's strategy and approach to managing technology and cyber risks includes policies that govern the technology environment and set standards related to information security and the use of technology, including;

- a risk averse approach to the design and ongoing management of the technology environment;
- the use of multiple layers of technologies that are designed to prevent unauthorized access, ransomware attacks, distributed denial of service and other cyber-attacks;
- coordinated global and regional information security offices that gather threat intelligence, detect, monitor and respond to security events and conduct regular threat and vulnerability risk assessments;
- independent oversight and assessment of the approach taken to mitigate technology and cyber risks by the Information Services Risk Management team, an independent group that acts as the second line of defense; and
- regular cyber security awareness sessions and mandatory cyber security training for all employees.

The Company also manages operational risks through the corporate insurance program which mitigates a portion of the operational risk exposure by purchasing insurance coverage that provides protection against unexpected material losses resulting from events such as property loss, cyber-attack or damage and liability exposures. The nature and amount of insurance protection purchased is assessed with regard to the Company's risk profile, risk appetite and tolerance for the associated risks, as well as legal requirements and contractual obligations.

Business Continuity Risk

Business continuity risk is the risk of loss because of the failure to provide for the continuity of business processes and operations under adverse conditions that may arise from natural, technological or human caused events.

A business continuity management framework has been implemented to manage business continuity risks and impacts through the development, testing, training and maintenance in four key areas, Emergency Response Planning Incident Management Planning, Business Recovery Planning and Disaster Recovery Planning.

Poor business resiliency in the face of natural, technological, or human caused events could prevent the Company from carrying out mission-critical business processes, with potential for lost revenue, regulatory sanctions and damage to reputation.

Process Risk

Process risk is the risk of loss resulting from inadequate or failed business processes which can adversely impact the Company's financial results, relationships with customers and reputation. Process risk includes risks arising from significant change initiatives such as business operations changes, major systems implementation, new product introductions and leadership changes, as well as core business operational activities. Process risk also includes risk associated with data aggregation and reporting, and model development and use.

Risk management seeks strategic alignment and congruency across all of the Company's business activities, including change initiatives and business-as-usual activities, with the Company's operational risk appetite and considers the potential impact on the Company's reputation. The Company monitors change initiatives to mitigate risks and realize benefits. Core business operational activities have quality control measures in place. Robust processes are in place for the management and oversight of model risk. Further, the Company seeks to control processes across the value chain through automation, standardization and process improvements to prevent or reduce operational losses.

Fraud Risk

Fraud risk is the risk of loss resulting from civil or criminal fraudulent activity including misappropriation of assets, identity theft, other breach of civil or criminal law by customers, contractors or other third parties and by employees or distribution associates. The external fraud environment continues to intensify for financial institutions, as increasingly sophisticated methods of organized fraud and cyber fraud are employed. Fraud can result in a financial loss or reputational impact to the Company and have other impacts that are detrimental to customers and other stakeholders.

The Company manages fraud through a combined focus on assessment, prevention, detection, investigation and response. The Company promotes a culture of honesty, integrity, transparency and fairness in its internal operations and further manages fiduciary responsibilities through the Company's Fraud Risk Management Policy and Code of Conduct. The Company has processes and controls in place to prevent fraud and employs various methods to detect fraud. A fraud response plan is in place to deal with events through a coordinated investigative strategy designed to protect stakeholders and the interests of the Company.

Supplier Risk

Supplier risk is the risk of loss resulting from the failure to establish and manage adequate supplier arrangement transactions or other interactions to meet the expected or contracted service level both within the Company and with external parties such as independent brokers, fund managers, reinsurers and other parties. The Company strategically engages suppliers to maintain cost efficiency, to optimize internal resources and capital and to utilize skills, expertise and resources not otherwise available to the Company. Suppliers that do not meet the Company's standards for performance can have a negative impact on the Company's financial results and reputation. To minimize this risk, the Company applies a supplier risk management framework to oversee and monitor interactions with suppliers throughout the entire supplier relationship, including how they meet standards for quality of service and protect stakeholders and the interests of the Company.

Conduct Risk

Risk Description

Conduct risk is the risk of unfair outcomes for customers as a result of inadequate or failed processes and/or inappropriate behaviours, offerings or interactions by the Company or its agents. A failure to identify and mitigate conduct risk impacts not only the Company's customers but can also have adverse reputational and financial consequences for the Company due to the cost of customer remediation, damage to reputation and/or regulatory fines.

Conduct Risk Management

The Company manages conduct risk through various processes which include:

- providing appropriate and clear customer disclosures and communications;
- applying product design, complaint, claims management and sales and advice processes that consider outcomes to customers; and
- conducting risk based advisor assessments and suitability reviews, maintaining controls and adhering to Board-approved policies and processes, including its Code of Conduct.

Conduct Risk is incorporated in risk management and compliance activities, including risk and control assessments, internal events reporting, emerging risk assessments, and other measurement, monitoring and reporting activities.

Strategic Risk

Risk Description

Strategic risk is the risk of the Company being unable to meet its key strategic goals as a result of failures of internal planning, ineffective strategic decision-making, major regulatory changes, macroeconomic or country risk events, or changes to the external environment manifesting over the medium to long term. In addition, strategic risk includes risks associated with the Company's holding company structure, potential future acquisitions and ongoing access to product distribution.

Strategic Risk Management

The Company manages strategic risk through engagement, industry representation and a strategic planning process. The Risk Function is engaged in the business planning cycle to align business strategies with the Company's Risk Appetite. The Company's strategic plan is reviewed with the Board of Directors and Senior Management, with the Risk Function providing objective assessment of enterprise strategic risks and risk mitigation plans. Significant risks and opportunities are identified, and a review of the alignment with risk strategy and qualitative risk preferences is completed. Initiatives, including those related to new markets, distribution channels, product design and investments, are also subject to independent risk review.

Holding Company Structure Risk

As a holding company, the Company's ability to pay interest, dividends and other operating expenses and to meet its obligations generally depends upon receipt of sufficient funds from its principal subsidiaries and its ability to raise additional capital. In the event of the bankruptcy, liquidation or reorganization of any of these subsidiaries, insurance and investment contract liabilities of these subsidiaries will be completely provided for before any assets of such subsidiaries are made available for distribution to the Company. In addition, the other creditors of these subsidiaries will generally be entitled to the payment of their claims before any assets are made available for distribution to the Company except to the extent that the Company is recognized as a creditor of the relevant subsidiaries.

Any payment (including payment of interest and dividends) by the principal subsidiaries is subject to restrictions set forth in relevant insurance, securities, corporate and other laws and regulations, which require that solvency and capital standards be maintained by Great-West Life, London Life, Canada Life, Great-West Financial, and their subsidiaries and certain subsidiaries of Putnam. There are considerable risks and benefits related to this structure.

Management monitors the solvency and capital positions of its principal subsidiaries opposite liquidity requirements at the holding company level. Management also establishes lines of credit for additional liquidity and may also access capital markets for funds. Management monitors compliance with the regulatory laws and regulations at both the holding company and operating company levels.

Mergers and Acquisitions Risk

From time-to-time, the Company and its subsidiaries evaluate existing companies, businesses, assets, products and services, and such review could result in the Company or its subsidiaries acquiring or disposing of businesses or assets. In the ordinary course of business, the Company considers and discusses the purchase or sale of companies, businesses segments or assets. If effected, such transactions could be material to the Company in size or scope, could result in risks and contingencies, including integration risks, relating to companies, businesses or assets that the Company acquires or expose it to the risk of claims relating to those it has disposed of, could result in changes in the value of the securities of the Company, including the common shares of the Company, and could result in the Company holding additional capital for contingencies that may arise after the transaction is completed. The Company mitigates these risks by conducting due diligence reviews before acquiring or disposing of companies, businesses or business segments or assets, by negotiating terms and conditions for the transaction and putting in place systems and processes to manage the risks after the transaction is completed.

Product Distribution Risk

Product distribution risk is the risk of loss resulting from the Company's inability to market its products through its network of distribution channels and intermediaries. These intermediaries generally offer their clients products in addition to, and in competition with, the Company's products, and are not obligated to continue working with the Company. In addition, certain investors rely on consultants to advise them on the choice of provider and the consultants may not always consider or recommend the Company. The loss of access to a distribution channel, the failure to maintain effective relationships with intermediaries or the failure to respond to changes in distribution channels could have a significant impact on the Company's ability to generate sales.

Product distribution risk is managed by maintaining a broad network of distribution relationships, with products distributed through numerous broker-dealers, managing general agencies, financial planners, banks and other financial institutions.

Sustainability Risk

Sustainability risk is the risk of loss arising from the inability to maintain business operations and sustain the growth of the Company due to negative externalities such as environmental degradation, social risk issues and climate change.

The Company may experience direct or indirect financial, operational or reputational impact stemming from environmental risk events, which include environmental issues, regulatory enforcement or costs associated with changes in environmental laws and regulations. The Company endeavors to respect the environment and to take a balanced and sustainable approach to conducting business. The Company has established environmental policies and guidelines pertaining to the acquisition and ongoing management of investment properties, loans secured by real property and investments in equity and fixed-income securities. These policies are approved by the Board of Directors and are reviewed annually.

Exposures and Sensitivities

Insurance and Investment Contract Liabilities

The following illustrates the approximate impact to the Company's earnings that would arise as a result of changes to management's best estimate of certain assumptions used to determine the Company's insurance contract liabilities.

Increase (decrease) in net earnings

	2018	2017
Mortality – 2% increase	**$ (270)**	$ (296)
Annuitant mortality – 2% decrease	**$ (457)**	$ (446)
Morbidity – 5% adverse change	**$ (271)**	$ (256)
Investment returns		
Parallel shift in yield curve		
1% increase	**$ –**	$ –
1% decrease	**$ –**	$ –
Change in interest rates		
1% increase	**$ 115**	$ 150
1% decrease	**$ (465)**	$ (523)
Change in equity values		
10% increase	**$ 73**	$ 48
10% decrease	**$ (266)**	$ (85)
Change in best estimate return assumptions for equities		
1% increase	**$ 476**	$ 439
1% decrease	**$ (539)**	$ (470)
Expenses – 5% increase	**$ (128)**	$ (127)
Policy termination and renewal – 10% adverse change	**$ (649)**	$ (672)

ACCOUNTING POLICIES

SUMMARY OF CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements in accordance with IFRS requires management to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities at the reporting date, and the reported amounts of revenue and expenses during the reporting period. The results of the Company reflect management's judgments regarding the impact of prevailing global credit, equity and foreign exchange market conditions. The estimation of insurance contract liabilities relies upon investment credit ratings. The Company's practice is to use third-party independent credit ratings where available.

The significant accounting estimates include the following:

Fair Value Measurement

Financial and other instruments held by the Company include portfolio investments, various derivative financial instruments, debentures and other debt instruments.

Financial instrument carrying values reflect the liquidity of the markets and the liquidity premiums embedded in the market pricing methods the Company relies upon.

The Company's assets and liabilities recorded at fair value have been categorized based upon the following fair value hierarchy:

Level 1 inputs utilize observable, quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access.

Level 2 inputs utilize other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3 inputs utilize one or more significant inputs that are not based on observable market inputs and include situations where there is little, if any, market activity for the asset or liability.

In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, the level in the fair value hierarchy within which the fair value measurement in its entirety falls has been determined based on the lowest level input that is significant to the fair value measurement in its entirety. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability.

Refer to note 10 in the Company's December 31, 2018 annual consolidated financial statements for disclosure of the Company's financial instruments fair value measurement by hierarchy level as at December 31, 2018.

Fair values for bonds classified as fair value through profit or loss or available-for-sale are determined using quoted market prices. Where prices are not quoted in a normally active market, fair values are determined by valuation models primarily using observable market data inputs. Market values for bonds and mortgages classified as loans and receivables are determined by discounting expected future cash flows using current market rates.

Fair values for equity release mortgages classified as fair value through profit or loss are determined by an internal valuation model that uses discounted future cash flows. Inputs to the model include marketable observable and non-market observable inputs.

Fair values for public stocks are generally determined by the last bid price for the security from the exchange where it is principally traded. Fair values for stocks for which there is no active market are determined by discounting expected future cash flows based on expected dividends and where market value cannot be measured reliably, fair value is estimated to be equal to cost. Fair values for investment properties are determined using independent appraisal services and include management adjustments for material changes in property cash flows, capital expenditures or general market conditions in the interim period between appraisals.

Investment impairment

Investments are reviewed regularly on an individual basis to determine impairment status. The Company considers various factors in the impairment evaluation process, including, but not limited to, the financial condition of the issuer, specific adverse conditions affecting an industry or region, decline in fair value not related to interest rates, bankruptcy or defaults and delinquency in payments of interest or principal. Investments are deemed to be impaired when there is no longer reasonable assurance of timely collection of the full amount of the principal and interest due. The fair value of an investment is not a definitive indicator of impairment, as it may be significantly influenced by other factors including the remaining term to maturity and liquidity of the asset; however, market price is taken into consideration when evaluating impairment.

For impaired mortgages and bonds classified as loans and receivables, provisions are established or write-offs made to adjust the carrying value to the net realizable amount. Wherever possible the fair value of collateral underlying the loans or observable market price is used to establish the estimated realizable value. For impaired available-for-sale bonds recorded at fair value, the accumulated loss recorded in accumulated other comprehensive income (loss) is reclassified to net investment income. Impairments on available-for-sale debt instruments are reversed if there is objective evidence that a permanent recovery has occurred. All gains and losses on bonds classified or designated as fair value through profit or loss are already recorded in net investment income; therefore, a reduction due to impairment of these assets will be recorded in net investment income. As well, when determined to be impaired, interest is no longer accrued and previous interest accruals are reversed.

Goodwill and intangibles impairment testing

Goodwill and indefinite life intangible assets are tested for impairment annually or more frequently if events indicate that impairment may have occurred. Intangible assets that were previously impaired are reviewed at each reporting date for evidence of reversal. In the event that certain conditions have been met, the Company would be required to reverse the impairment charge or a portion thereof.

Goodwill and indefinite life intangible assets have been allocated to cash generating unit groupings, representing the lowest level that the assets are monitored for internal reporting purposes. Goodwill and indefinite life intangible assets are tested for impairment by comparing the carrying value of each cash generating unit grouping containing the assets to its recoverable amount. The recoverable amount is the higher of the asset's fair value less costs of disposal and value-in-use, which is calculated using the present value of estimated future cash flows expected to be generated. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount.

Insurance and investment contract liabilities

Insurance and investment contract liabilities represent the amounts required, in addition to future premiums and investment income, to provide for future benefit payments, policyholder dividends, commission and policy administrative expenses for all insurance and annuity policies in-force with the Company. The Appointed Actuaries of the Company's subsidiaries are responsible for determining the amount of the liabilities to make appropriate provisions for the Company's obligations to policyholders. The Appointed Actuaries determine the liabilities for insurance contracts using generally accepted actuarial practices, according to the standards established by the Canadian Institute of Actuaries. The valuation uses the Canadian Asset Liability Method (CALM). This method involves the projection of future events in order to determine the amount of assets that must be set aside currently to provide for all future obligations and involves a significant amount of judgment.

In the computation of insurance contract liabilities, valuation assumptions have been made regarding rates of mortality/morbidity, investment returns, levels of operating expenses, rates of policy termination and rates of utilization of elective policy options or provisions. The valuation assumptions use best estimates of future experience together with a margin for adverse deviation. These margins are necessary to provide for possibilities of mis-estimation and/or future deterioration in the best-estimate assumptions and provide reasonable assurance that insurance contract liabilities cover a range of possible outcomes. Margins are reviewed periodically for continued appropriateness.

Investment contract liabilities are measured at fair value determined using discounted cash flows utilizing the yield curves of financial instruments with similar cash flow characteristics.

The methods for arriving at these valuation assumptions are outlined below:

Mortality – A life insurance mortality study is carried out annually for each major block of insurance business. The results of each study are used to update the Company's experience valuation mortality tables for that business. When there is insufficient data, use is made of the latest industry experience to derive an appropriate valuation mortality assumption. Improvement scales for life insurance and annuitant mortality are updated periodically based on population and industry studies, product specific considerations, as well as professional guidance. In addition, appropriate provisions are made for future mortality deterioration on term insurance. A 2% increase in the best estimate assumption would cause a decrease in net earnings of approximately $270 million.

Annuitant mortality is also studied regularly, and the results used to modify established industry experience annuitant mortality tables. A 2% decrease in the best estimate assumption would cause a decrease in net earnings of approximately $457 million.

Morbidity – The Company uses industry developed experience tables modified to reflect emerging Company experience. Both claim incidence and termination are monitored regularly, and emerging experience is factored into the current valuation. For products for which morbidity is a significant assumption, a 5% decrease in best estimate termination assumptions for claim liabilities and a 5% increase in best-estimate incidence assumptions for active life liabilities would cause a decrease in net earnings of approximately $271 million.

Property and casualty reinsurance – Insurance contract liabilities for property and casualty reinsurance written by London Reinsurance Group Inc. (LRG) are determined using accepted actuarial practices for property and casualty insurers in Canada. The insurance contract liabilities have been established using cash flow valuation techniques including discounting. The insurance contract liabilities are based on cession statements provided by ceding companies. In addition, insurance contract liabilities also include an amount for incurred but not reported losses, which may differ significantly from the ultimate loss development. The estimates and underlying methodology are continually reviewed and updated and adjustments to estimates are reflected in net earnings. LRG analyzes the emergence of claims experience against expected assumptions for each reinsurance contract separately and at the portfolio level. If necessary, a more in depth analysis is undertaken of the cedant experience.

Investment returns – The assets which correspond to the different liability categories are segmented. For each segment, projected cash flows from the current assets and liabilities are used in CALM to determine insurance contract liabilities. Cash flows from assets are reduced to provide for asset default losses. Testing under several interest rate scenarios (including increasing and decreasing rates) is done to provide for reinvestment risk. The total provision for interest rates is sufficient to cover a broader or more severe set of risks than the minimum arising from the current Canadian Institute of Actuaries' prescribed scenarios.

The range of interest rates covered by these provisions is set in consideration of long-term historical results and is monitored quarterly with a full review annually. An immediate 1% parallel shift in the yield curve would not have a material impact on the Company's view of the range of interest rates to be covered by the provisions. If sustained, however, the parallel shift could impact the Company's range of scenarios covered.

The total provision for interest rates also considers the impact of the Canadian Institute of Actuaries' prescribed scenarios.

- The effect of an immediate 1% parallel increase in the yield curve on the prescribed scenarios resulted in interest rate changes to assets and liabilities that will offset each other with no impact to net earnings.
- The effect of an immediate 1% parallel decrease in the yield curve on the prescribed scenarios resulted in interest rate changes to assets and liabilities that will offset each other with no impact to net earnings.

Another way of measuring the interest rate risk associated with this assumption is to determine the effect on the insurance and investment contract liabilities impacting the shareholders' net earnings of the Company of a 1% change in the Company's view of the range of interest rates to be covered by these provisions.

- The effect of an immediate 1% increase in the low and high end of the range of interest rates recognized in the provisions would be to decrease these insurance and investment contract liabilities by approximately $165 million causing an increase in net earnings of approximately $115 million.
- The effect of an immediate 1% decrease in the low and high end of the range of interest rates recognized in the provisions would be to increase these insurance and investment contract liabilities by approximately $639 million causing a decrease in net earnings of approximately $465 million.

In addition to interest rates, the Company is also exposed to movements in equity markets.

Some insurance and investment contract liabilities are supported by investment properties, common stocks and private equities; for example, segregated fund products and products with long-tail cash flows. Generally, these liabilities will fluctuate in line with equity values. However, there may be additional market and liability impacts as a result of changes in the equity values that will cause the liabilities to fluctuate differently than the equity values.

- A 10% increase in equity values would be expected to additionally decrease non-participating insurance and investment contract liabilities by approximately $87 million, causing an increase in net earnings of approximately $73 million.
- A 10% decrease in equity values would be expected to additionally increase non-participating insurance and investment contract liabilities by approximately $338 million, causing a decrease in net earnings of approximately $266 million.

The best-estimate return assumptions for equities are primarily based on long-term historical averages. Changes in the current market could result in changes to these assumptions and will impact both asset and liability cash flows.

- A 1% increase in the best estimate assumption would be expected to decrease non-participating insurance contract liabilities by approximately $591 million causing an increase in net earnings of approximately $476 million.
- A 1% decrease in the best estimate assumption would be expected to increase non-participating insurance contract liabilities by approximately $680 million causing a decrease in net earnings of approximately $539 million.

Expenses – Contractual policy expenses (e.g., sales commissions) and tax expenses are reflected on a best estimate basis. Expense studies for indirect operating expenses are updated regularly to determine an appropriate estimate of future operating expenses for the liability type being valued. Improvements in unit operating expenses are not projected. An inflation assumption is incorporated in the estimate of future operating expenses consistent with the interest rate scenarios projected under CALM as inflation is assumed to be correlated with new money interest rates. A 5% increase in the best estimate maintenance unit expense assumption would cause a decrease in net earnings of approximately $128 million.

Policy termination – Studies to determine rates of policy termination are updated regularly to form the basis of this estimate. Industry data is also available and is useful where the Company has no experience with specific types of policies or its exposure is limited. The Company's most significant exposures are in respect of the T-100 and Level Cost of Insurance Universal Life products in Canada and policy renewal rates at the end of the term for renewable term policies in Canada and Reinsurance. Industry experience has guided the Company's assumptions for these products as its own experience is very limited. A 10% adverse change in the best-estimate policy termination and renewal assumptions would cause a decrease in net earnings of approximately $649 million.

Utilization of elective policy options – There are a wide range of elective options embedded in the policies issued by the Company. Examples include term renewals, conversion to whole life insurance (term insurance), settlement annuity purchase at guaranteed rates (deposit annuities) and guarantee re-sets (segregated fund maturity guarantees). The assumed rates of utilization are based on Company or industry experience when it exists and when not on judgment considering incentives to utilize the option. Generally, whenever it is clearly in the best interests of an informed policyholder to utilize an option, then it is assumed to be elected.

Policyholder dividends and adjustable policy features – Future policyholder dividends and other adjustable policy features are included in the determination of insurance contract liabilities with the assumption that policyholder dividends or adjustable benefits will change in the future in response to the relevant experience. The dividend and policy adjustments are determined consistent with policyholders' reasonable expectations, such expectations being influenced by the participating policyholder dividend policies and/or policyholder communications, marketing material and past practice. It is the Company's expectation that changes will occur in policyholder dividend scales or adjustable benefits for participating or adjustable business respectively, corresponding to changes in the best estimate assumptions, resulting in an immaterial net change in insurance contract liabilities. Where underlying guarantees may limit the ability to pass all of this experience back to the policyholder, the impact of this non-adjustability impacting shareholders' net earnings is reflected in the impacts of changes in best estimate assumptions above.

Income taxes

The Company is subject to income tax laws in various jurisdictions. The Company's operations are complex and related income tax interpretations, regulations and legislation that pertain to its activities are subject to continual change. As multinational life insurance companies, the Company's primary Canadian operating subsidiaries are subject to a regime of specialized rules prescribed under the *Income Tax Act (Canada)* for purposes of determining the amount of the Companies' income that will be subject to tax in Canada.

The Company utilizes tax planning strategies involving multiple jurisdictions to obtain tax efficiencies. The Company continually assesses the uncertainty associated with these strategies and holds an appropriate level of provisions for uncertain income tax positions. Accordingly, the provision for income taxes represents management's interpretation of the relevant income tax laws and its estimate of current and deferred income tax implications of the transactions and events during the period. Deferred income tax assets and liabilities are recorded based on expected future income tax rates and management's assumptions regarding the expected timing of the reversal of temporary differences. The Company has substantial deferred income tax assets. The recognition of deferred income tax assets depends on management's assumption that future earnings will be sufficient to realize the deferred benefit. The amount of the asset recorded is based on management's best estimate of the timing of the reversal of the asset.

The audit and review activities of the Canada Revenue Agency and other jurisdictions' tax authorities affect the ultimate determination of the amounts of income taxes payable or receivable, deferred income tax assets or liabilities and income tax expense. Therefore, there can be no assurance that income taxes will be payable as anticipated and/or the amount and timing of receipt or use of the income tax related assets will be as currently expected. Management's experience indicates the taxation authorities are more aggressively pursuing perceived income tax issues and have increased the resources they put to these efforts.

Employee future benefits

The Company's subsidiaries maintain contributory and non-contributory defined benefit and defined contribution pension plans for certain employees and advisors. The defined benefit pension plans provide pensions based on length of service and final average pay. For most plans, active plan participants share in the cost of benefits through employee contributions in respect of current service. Certain pension payments are indexed on either an ad hoc basis or a guaranteed basis. The determination of the defined benefit obligation reflects pension benefits in accordance with the terms of the plans. The assets supporting the funded pension plans are held in separate trusteed pension funds. The obligations for the wholly unfunded plans are included in other liabilities and are supported by general assets. The defined benefit plans of the Company's subsidiaries are closed to new entrants with plans in several geographies also closed to future defined benefit accruals. New hires are eligible only for defined contribution benefits. Active plan participants in defined benefit plans closed to future defined benefit accruals are eligible to accrue defined contribution benefits. The Company's defined benefit plan exposure will continue to be reduced in future years. The defined contribution pension plans provide pension benefits based on accumulated employee and subsidiary Company contributions. The Company's subsidiaries also provide post-employment health, dental and life insurance benefits to eligible employees, advisors and their dependents. These plans are also closed to new entrants. For further information on the Company's pension plans and other post-employment benefits refer to note 24 in the Company's December 31, 2018 annual consolidated financial statements.

For the defined benefit plans of the Company's subsidiaries, service costs and net interest costs are recognized in the Consolidated Statements of Earnings. Service costs include current service cost, administration expenses, past service costs and the impact of curtailments and settlements. The impact of curtailments and special termination benefits resulting from the Canadian transformation were recognized as part of restructuring costs. Re-measurements of the defined benefit liability (asset) due to asset returns less (greater) than interest income, actuarial losses (gains) and changes in the asset ceiling are recognized immediately in the Consolidated Statements of Comprehensive Income.

Accounting for defined benefit pension and other post-employment benefits requires estimates of expected increases in compensation levels, indexation of certain pension payments, trends in health-care costs, the period of time over which benefits will be paid, as well as the appropriate discount rates for past and future service liabilities. These assumptions are determined by management using actuarial methods, and are reviewed and approved annually. Emerging experience that differs from the assumptions will be revealed in future valuations and will affect the future financial position of the plans and net periodic benefit costs.

Actuarial assumptions – employee future benefits

At December 31	Defined benefit pension plans 2018	Defined benefit pension plans 2017	Other post-employment benefits 2018	Other post-employment benefits 2017
Actuarial assumptions used to determine benefit cost				
Discount rate – past service liabilities	**3.1%**	3.3%	**3.5%**	3.8%
Discount rate – future service liabilities	**3.4%**	3.4%	**3.8%**	4.3%
Rate of compensation increase	**3.1%**	3.2%	**–**	–
Future pension increases (1)	**1.3%**	1.1%	**–**	–
Actuarial assumptions used to determine defined benefit obligation				
Discount rate – past service liabilities	**3.4%**	3.1%	**3.8%**	3.5%
Rate of compensation increase	**3.0%**	3.1%	**–**	–
Future pension increases (1)	**1.4%**	1.3%	**–**	–
Medical cost trend rates:				
Initial medical cost trend rate			**4.8%**	5.0%
Ultimate medical cost trend rate			**4.1%**	4.5%
Year ultimate trend rate is reached			**2040**	2029

(1) Represents the weighted average of plans subject to future pension increases.

Actuarial assumptions – The period of time over which benefits are assumed to be paid is based on best estimates of future mortality, including allowances for mortality improvements. This estimate is subject to considerable uncertainty, and judgment is required in establishing this assumption. As mortality assumptions are significant in measuring the defined benefit obligation, the mortality assumptions applied by the Company take into consideration such factors as age, gender and geographic location, in addition to an estimation of future improvements in longevity.

The mortality tables are reviewed at least annually, and assumptions are in accordance with accepted actuarial practices. Emerging plan experience is reviewed and considered in establishing the best estimate for future mortality.

As these assumptions relate to factors that are long-term in nature, they are subject to a degree of uncertainty. Differences between actual experience and the assumptions, as well as changes in the assumptions resulting from changes in future expectations, result in increases or decreases in the pension and post-employment benefits expense and defined benefit obligation in future years. There is no assurance that the plans will be able to earn assumed rates of return, and market driven changes to assumptions could impact future contributions and expenses.

The following table indicates the impact of changes to certain key assumptions related to pension and post-employment benefits.

Impact of a change of 1.0% in actuarial assumptions on defined benefit obligation

	1% increase 2018	1% increase 2017	1% decrease 2018	1% decrease 2017
Defined benefit pension plans:				
Impact of a change to the discount rate	**$ (1,109)**	$ (1,187)	**$ 1,444**	$ 1,553
Impact of a change to the rate of compensation increase	**277**	313	**(252)**	(270)
Impact of a change to the rate of inflation	**526**	582	**(477)**	(514)
Other post-employment benefits:				
Impact of a change to assumed medical cost trend rates	**26**	32	**(23)**	(27)
Impact of a change to the discount rate	**(38)**	(43)	**46**	52

To measure the impact of a change in an assumption, all other assumptions were held constant. It is expected that there would be interaction between at least some of the assumptions.

Funding – The Company's subsidiaries have both funded and unfunded pension plans as well as other post-employment benefit plans that are unfunded. The Company's subsidiaries' funded pension plans are funded to or above the amounts required by relevant legislation. During the year, the Company's subsidiaries contributed $280 million ($250 million in 2017) to the pension plans and made benefit payments of $19 million ($19 million in 2017) for post-employment benefits. The Company's subsidiaries expect to contribute $274 million to the pension plans and make benefit payments of $21 million for post-employment benefits in 2019.

International Financial Reporting Standards

Due to the evolving nature of International Financial Reporting Standards (IFRS), there are a number of IFRS changes that impacted the Company in 2018, as well as standards that could impact the Company in future reporting periods. The Company actively monitors future IFRS changes proposed by the International Accounting Standards Board (IASB) to assess if the changes to the standards may have an impact on the Company's results or operations.

Effective January 1, 2018, the Company adopted IFRS 15, *Revenue from Contracts with Customers* (IFRS 15) which replaces IAS 11, *Construction Contracts* and IAS 18, *Revenue*. The standard prescribes a five-step recognition and measurement model for revenue from contracts with customers and related costs. Revenue arising from insurance contracts, lease contracts and financial instruments are out of the scope of IFRS 15 whereas fee income on other contracts is in scope.

Fee income includes fees earned from management of segregated fund assets, proprietary mutual fund assets, record-keeping, fees earned on administrative services only Group health contracts, commissions and fees earned from management services. Under IFRS 15, the Company recognizes revenue on the transfer of services to customers for the amount that reflects the consideration expected to be received in exchange for those services promised.

As a result of changes to the treatment of costs to fulfill a contract with the customer on transition to IFRS 15, the Company applied the modified retrospective approach and recorded an adjustment for the derecognition of certain deferred sales commissions and related income tax liabilities which resulted in a decrease of $64 million to opening accumulated surplus at January 1, 2018.

The Company adopted the narrow scope amendments to IFRS for IAS 40, *Investment Property*, IFRS 2, *Share-based Payment*, IFRIC 22, *Foreign Currency Transactions and Advance Consideration* and *Annual Improvements 2014 – 2016 Cycle* for the amendments to IFRS 1, *First-time Adoption of International Financial Reporting Standards* and IAS 28, *Investments in Associates and Joint Ventures,* effective January 1, 2018. The adoption of these narrow scope amendments did not have a significant impact on the Company's financial statements.

For a further description of the impact of the accounting policy change, refer to note 2 of the Company's December 31, 2018 annual consolidated financial statements.

IFRS that have changed or may change subsequent to 2018 and could impact the Company in future reporting periods, are set out in the following table:

Standard	Summary of Future Changes
IFRS 16 – *Leases*	In January 2016, the IASB issued IFRS 16, *Leases*, with an effective date of January 1, 2019, which introduced new guidance for identifying leases as well as the accounting, measurement and presentation of leases by the lessee. The lessee now recognizes a liability for the future lease payments to be made for each lease. A right-of-use asset is also recognized and amortized over the useful life. As a result, the previous distinction between operating and finance leases no longer applies. In contrast to the significant changes for lessees, the new standard will retain many key aspects of the current lessor accounting model. With respect to first time application of IFRS 16, the Company can choose to apply the standard using the full retrospective approach or modified retrospective approach. The Company plans on using the modified retrospective approach. The Company will be adopting the standard on its effective date of January 1, 2019. The Company is in the process of finalizing its transition approach. The presentation of right-of-use assets and lease liabilities on the balance sheet will be within other assets and other liabilities, respectively. The Company anticipates the adoption of the standard to result in approximate increases to assets of $525 million and liabilities of $600 million on the Consolidated Balance Sheets. The Company does not anticipate that there will be a material impact in the Consolidated Statements of Earnings.
IFRS 17 – *Insurance Contracts*	In May 2017, the IASB issued IFRS 17, *Insurance Contracts*, which will replace IFRS 4, *Insurance Contracts* and will be applied retrospectively. If the full retrospective application is impractical, then the modified retrospective or fair value methods may be used. In November 2018, the IASB proposed an amendment to IFRS 17 providing a deferral of one year of the effective date of the standard to January 1, 2022. In addition, the IASB extended to January 1, 2022 the exemption for insurers to apply the financial instruments standard, IFRS 9 – *Financial Instruments*, so that both IFRS 9 and IFRS 17 will have the same effective date. The IASB continues to evaluate certain elements of the standard and is expected to issue narrow-scope amendments specific to these items. The adoption of IFRS 17 is a significant initiative for the Company supported by a formal governance framework and project plan, for which substantial resources are being dedicated. The Company has made progress in implementing its project plan. The Company has assembled a project team that is working on the implementation of IFRS 17 which involves preparing the financial reporting systems and processes for reporting under IFRS 17, as well as monitoring developments from the IASB, the Transition Resource Group for IFRS 17 and other industry associations. IFRS 17 sets out the requirements for the recognition, measurement, presentation and disclosures of insurance contracts a company issues and reinsurance contracts it holds. IFRS 17 introduces three new measurement models depending on the nature of the insurance contracts. IFRS 17 requires entities to measure insurance contract liabilities on the balance sheet as the total of: (a) the fulfilment cash flows – the current estimates of amounts that a company expects to collect from premiums and pay out for claims, benefits and expenses, including an adjustment for the timing and risk of those amounts; and (b) the contractual service margin – the future profit for providing insurance coverage.

Standard	Summary of Future Changes
IFRS 17 – *Insurance Contracts* (continued)	The future profit for providing insurance coverage is recognized in profit or loss over time as the insurance coverage is provided. IFRS 17 also requires the Company to distinguish between groups of contracts expected to be profit making and groups of contracts expected to be onerous. The Company is required to update the fulfilment cash flows at each reporting date, using current estimates of the amount, timing and uncertainty of cash flows and discount rates. IFRS 17 will affect how the Company accounts for its insurance contracts and how it reports financial performance in the Consolidated Statements of Earnings. The Company continues to assess the impact for IFRS 17, which is expected to be significant on the timing of earnings recognition for its insurance contracts as well as continuing to assess the impact on regulatory and tax regimes that are dependent upon IFRS accounting values. The adoption of IFRS 17 will also have a significant impact on how insurance contract results are presented and disclosed in the consolidated financial statements.
IFRS 9 – *Financial Instruments*	In July 2014, the IASB issued a final version of IFRS 9, *Financial Instruments* (IFRS 9) to replace IAS 39, *Financial Instruments: Recognition and Measurement*. The effective date for IFRS 9 has been deferred to align with the effective date for IFRS 17 of January 1, 2022. The standard provides changes to financial instruments accounting for the following: • classification and measurement of financial instruments based on a business model approach for managing financial assets and the contractual cash flow characteristics of the financial asset; • impairment based on an expected loss model; and • hedge accounting that incorporates the risk management practices of an entity. In September 2016, the IASB issued an amendment to IFRS 4, *Insurance Contracts* (IFRS 4). The amendment "Applying IFRS 9, *Financial Instruments* with IFRS 4, *Insurance Contracts*" provides qualifying insurance companies with two options to address the potential volatility associated with implementing the IFRS 9 standard before the new proposed insurance contract standard is effective. The two options are as follows: • *Deferral Approach* – provides the option to defer implementation of IFRS 9 until the year 2022 or the effective date of the new insurance contract standard, whichever is earlier; or • *Overlay Approach* – provides the option to recognize the volatility that could arise when IFRS 9 is applied within other comprehensive income, rather than profit or loss. The Company qualifies for the amendment and is applying the deferral approach to allow adoption of both IFRS 9 and IFRS 17 simultaneously. The disclosure for the measurement and classification of the Company's portfolio investments provides most of the information required by IFRS 9. The Company continues to evaluate the impact for the adoption of this standard with the adoption of IFRS 17.
Annual Improvements 2015 – 2017 Cycle	In December 2017, the IASB issued *Annual Improvements 2015 – 2017 Cycle* as part of its ongoing process to efficiently deal with non-urgent narrow scope amendments to IFRS. Four amendments were included in this issue relating to IFRS 3, *Business Combinations*, IFRS 11, *Joint Arrangements*, IAS 12, *Income Taxes* and IAS 23 *Borrowing Costs*. The amendments are effective January 1, 2019. Adoption of these amendments will not have an impact on the Company's consolidated financial statements.
IAS 28 – *Investments in Associates and Joint Ventures*	In October 2017, the IASB issued amendments to IAS 28, *Investments in Associates and Joint Ventures*. The amendments clarify that a company is to account for long-term interests in an associate or joint venture using IFRS 9, *Financial Instruments* when the equity method is not applied. The amendments are effective January 1, 2019. Adoption of these amendments will not have an impact on the Company's consolidated financial statements.
IAS 19 – *Employee Benefits*	In February 2018, the IASB issued amendments to IAS 19, *Employee Benefits*. The amendments clarify that updated actuarial assumptions are to be used in accounting for when a plan amendment, curtailment or settlement occurs. The amendments are effective January 1, 2019. Adoption of these amendments will not have an impact on the Company's consolidated financial statements.
IFRIC 23 – *Uncertainty over Income Tax Treatments*	In June 2017, the IASB issued IFRIC 23, *Uncertainty over Income Tax Treatments*. The interpretation clarifies how to apply the recognition and measurement requirements in IAS 12 *Income Taxes*, when there is uncertainty over income tax treatments. The interpretation is effective January 1, 2019. The Company is finalizing its analysis and expects an adjustment to opening accumulated surplus at January 1, 2019, which will not have a material impact on the Company's consolidated financial statements.
IFRS 3 – *Business Combinations*	In October 2018, the IASB issued amendments to IFRS 3, *Business Combinations*. The amendments provide additional guidance as to whether a company acquired a business or a group of assets. The amendments are effective January 1, 2020. The Company is evaluating the impact of the adoption of these amendments.
IAS 1 – *Presentation of Financial Statements* and IAS 8 – *Accounting Policies, Changes in Accounting Estimates and Errors*	In October 2018, the IASB issued amendments to IAS 1, *Presentation of Financial Statements* and IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*. The amendments are to clarify the definition of 'material' and to align the definition used in the Conceptual Framework and the standards themselves. The amendments are effective January 1, 2020. The Company is evaluating the impact of the adoption of these amendments.

OTHER INFORMATION

SELECTED ANNUAL INFORMATION

(in $ millions, except per share amounts)	Years ended December 31 2018	2017 [1]	2016 [2]
Total revenue [1]	**$ 44,032**	$ 47,117	$ 46,381
Net earnings – common shareholders			
Net earnings	**2,961**	2,149	2,641
Net earnings per common share			
Basic	**2.996**	2.173	2.668
Diluted	**2.994**	2.170	2.663
Total assets			
Total assets [2]	**$ 427,689**	$ 419,838	$ 399,733
Proprietary mutual funds and institutional net assets	**281,664**	278,954	259,215
Total assets under management	**709,353**	698,792	658,948
Other assets under administration	**689,520**	651,121	589,291
Total assets under administration	**$ 1,398,873**	$ 1,349,913	$ 1,248,239
Total liabilities [2]	**$ 400,291**	$ 394,302	$ 374,725
Dividends paid per share			
Series F First Preferred	**1.4750**	1.4750	1.4750
Series G First Preferred	**1.3000**	1.3000	1.3000
Series H First Preferred	**1.21252**	1.21252	1.21252
Series I First Preferred	**1.1250**	1.1250	1.1250
Series L First Preferred	**1.41250**	1.41250	1.41250
Series M First Preferred	**1.450**	1.450	1.450
Series N First Preferred	**0.544000**	0.544000	0.544000
Series O First Preferred	**0.628745**	0.466386	0.449219
Series P First Preferred	**1.350**	1.350	1.350
Series Q First Preferred	**1.2875**	1.2875	1.2875
Series R First Preferred	**1.200**	1.200	1.200
Series S First Preferred	**1.312500**	1.312500	1.312500
Series T First Preferred [3]	**1.2875**	0.7981	–
Common	**1.556**	1.468	1.384

(1) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

(2) Comparative figures have been reclassified as described in note 2 and note 34 to the Company's December 31, 2017 annual consolidated financial statements.

(3) The Series T First Preferred Shares were issued on May 18, 2017. The first dividend payment was made on September 29, 2017 in the amount of $0.476200 per share. Regular quarterly dividends are $0.321875 per share.

QUARTERLY FINANCIAL INFORMATION

(in $ millions, except per share amounts)	2018 Q4	2018 Q3	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2	2017 Q1
Total revenue (1) (2)	**$ 11,699**	$ 12,027	$ 10,613	$ 9,693	$ 12,912	$ 10,222	$ 11,077	$ 12,906
Common shareholders								
Net earnings								
Total	**710**	689	831	731	392	581	585	591
Basic – per share	**0.719**	0.697	0.839	0.740	0.397	0.587	0.591	0.598
Diluted – per share	**0.719**	0.697	0.839	0.739	0.396	0.587	0.590	0.597
Adjusted net earnings (3)								
Total	**710**	745	831	731	734	582	712	619
Basic – per share	**0.719**	0.754	0.839	0.740	0.742	0.589	0.719	0.627
Diluted – per share	**0.719**	0.753	0.839	0.739	0.741	0.588	0.718	0.625

(1) Revenue includes the changes in fair value through profit or loss on investment assets.

(2) Comparative figures have been reclassified to reflect presentation adjustments relating to the adoption of IFRS 15, *Revenue from Contracts with Customers,* as described in the "International Financial Reporting Standards" section and in note 2 to the Company's December 31, 2018 annual consolidated financial statements.

(3) Adjusted net earnings attributable to common shareholders and adjusted net earnings per common share are non-IFRS measures of earnings performance. The following adjustments were made in each quarter:

	2018 Q4	2018 Q3	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2	2017 Q1
Restructuring costs	$ –	$ 56	$ –	$ –	$ 4	$ 1	$ 127	$ 28
Net charge on sale of equity investment	–	–	–	–	122	–	–	–
U.S. tax reform impact	–	–	–	–	216	–	–	–
Total Adjustments	**$ –**	**$ 56**	**$ –**	**$ –**	**$ 342**	**$ 1**	**$ 127**	**$ 28**

Lifeco's consolidated net earnings attributable to common shareholders were $710 million for the fourth quarter of 2018 compared to $392 million reported a year ago. On a per share basis, this represents $0.719 per common share ($0.719 diluted) for the fourth quarter of 2018 compared to $0.397 per common share ($0.396 diluted) a year ago.

Total revenue for the fourth quarter of 2018 was $11,699 million and comprises premium income of $9,045 million, regular net investment income of $1,632 million, a negative change in fair value through profit or loss on investment assets of $398 million and fee and other income of $1,420 million.

Disclosure Controls and Procedures

The Company's disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed by the Company in reports filed or submitted by it under provincial and territorial securities legislation is: (a) recorded, processed, summarized and reported within the time periods specified in the provincial and territorial securities legislation, and (b) accumulated and communicated to the Company's senior management, including the President and Chief Executive Officer and the Executive Vice-President and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Management evaluated the effectiveness of the Company's disclosure controls and procedures as at December 31, 2018 and, based on such evaluation, the President and Chief Executive Officer and the Executive Vice-President and Chief Financial Officer have concluded that the Company's disclosure controls and procedures are effective.

Internal Control Over Financial Reporting

The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. The Company's management is responsible for establishing and maintaining effective internal control over financial reporting. All internal control systems have inherent limitations and may become ineffective because of changes in conditions. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

The Company's management, under the supervision of the President and Chief Executive Officer and the Executive Vice-President and Chief Financial Officer, has evaluated the effectiveness of the Company's internal control over financial reporting based on the 2013 *Internal Control – Integrated Framework* (COSO Framework) published by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management adopted the revised 2013 COSO Framework in 2015 as the basis to evaluate the effectiveness of the Lifeco's internal control over financial reporting.

During the twelve months ended December 31, 2018, there have been no changes in the Company's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting. Management evaluated the effectiveness of the Company's internal control over financial reporting as at December 31, 2018 and, based on such evaluation, the President and Chief Executive Officer and the Executive Vice-President and Chief Financial Officer have concluded that the Company's internal control over financial reporting is effective and that there are no material weaknesses in the Company's internal control over financial reporting.

Transactions with Related Parties

In the normal course of business, Great-West Life and Putnam enter into various transactions with related companies, which include providing insurance benefits and sub-advisory services to other companies within the Power Financial Corporation (Power Financial), Lifeco's parent, group of companies enabling each organization to take advantage of economies of scale and areas of expertise. In all cases, transactions were at market terms and conditions.

During the year, Great-West Life provided to and received from IGM Financial Inc. and its subsidiaries (IGM), a member of the Power Financial group of companies, certain administrative services enabling each organization to take advantage of economies of scale and areas of expertise. Great-West Life also provided life insurance, annuity and disability insurance products under a distribution agreement with IGM. London Life provided distribution services to IGM. All transactions were provided at market terms and conditions.

Segregated funds of the Company were invested in funds managed by IG Wealth Management and Mackenzie Investments. The Company also has interests in mutual funds, open-ended investment companies and unit trusts. Some of these funds are managed by related parties of the Company and the Company receives management fees related to these services. All transactions were provided at market terms and conditions.

At December 31, 2018, the Company held $86 million ($74 million in 2017) of debentures issued by IGM. During 2018, the Company purchased debentures from IGM with a total market value at December 31, 2018 of $14 million ($31 million in 2017).

During the normal course of business in 2018, the Company purchased residential mortgages of $61 million from IGM ($137 million in 2017).

The Company holds investments in Portag3 Ventures Limited Partnership, Portag3 Ventures II Limited Partnership and other entities which invest in the FinTech sector. These investments were made in partnership with Power Financial, IGM and, in certain circumstances, third-party investors.

The Company provides asset management, employee benefits and administrative services for employee benefit plans relating to pension and other post-employment benefits for employees of the Company and its subsidiaries. These transactions were provided at market terms and conditions.

As at December 31, 2018 and December 31, 2017, there were no significant outstanding loans or guarantees and no material loans or guarantees issued during 2018 or 2017 with related parties. There were no provisions for uncollectible amounts from related parties during 2018 or 2017.

Translation of Foreign Currency

Through its operating subsidiaries, Lifeco conducts business in multiple currencies. The four primary currencies are the Canadian dollar, the U.S. dollar, the British pound and the euro. Throughout this document, foreign currency assets and liabilities are translated into Canadian dollars at the market rate at the end of the reporting period. All income and expense items are translated at an average rate for the period. The rates employed are:

Translation of foreign currency

	2018				2017			
Period ended	**Dec. 31**	Sept. 30	June 30	Mar. 31	Dec. 31	Sept. 30	June 30	Mar. 31
United States dollar								
Balance sheet	**$ 1.36**	$ 1.29	$ 1.31	$ 1.29	$ 1.26	$ 1.25	$ 1.30	$ 1.33
Income and expenses	**$ 1.32**	$ 1.31	$ 1.29	$ 1.26	$ 1.27	$ 1.25	$ 1.34	$ 1.32
British pound								
Balance sheet	**$ 1.74**	$ 1.69	$ 1.73	$ 1.81	$ 1.70	$ 1.67	$ 1.69	$ 1.67
Income and expenses	**$ 1.70**	$ 1.70	$ 1.76	$ 1.76	$ 1.69	$ 1.64	$ 1.72	$ 1.64
Euro								
Balance sheet	**$ 1.56**	$ 1.50	$ 1.53	$ 1.59	$ 1.51	$ 1.47	$ 1.48	$ 1.42
Income and expenses	**$ 1.51**	$ 1.52	$ 1.54	$ 1.55	$ 1.50	$ 1.47	$ 1.48	$ 1.41

Additional information relating to Lifeco, including Lifeco's most recent consolidated financial statements, CEO/CFO certification and Annual Information Form are available at www.sedar.com.

Financial Reporting Responsibility

The consolidated financial statements are the responsibility of management and are prepared in accordance with International Financial Reporting Standards (IFRS). The financial information contained elsewhere in the annual report is consistent with that in the consolidated financial statements. The consolidated financial statements necessarily include amounts that are based on management's best estimates. These estimates are based on careful judgments and have been properly reflected in the consolidated financial statements. In the opinion of management, the accounting practices utilized are appropriate in the circumstances and the consolidated financial statements present fairly, in all material respects, the financial position of the Company and the results of its operations and its cash flows in accordance with IFRS.

In carrying out its responsibilities, management maintains appropriate internal control over financial reporting designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with IFRS.

The consolidated financial statements were approved by the Board of Directors, which has oversight responsibilities with respect to financial reporting. The Board of Directors carries out this responsibility principally through the Audit Committee, which comprises independent directors. The Audit Committee is charged with, among other things, the responsibility to:

- Review the interim and annual consolidated financial statements and report thereon to the Board of Directors.
- Review internal control procedures.
- Review the independence of the external auditors and the terms of their engagement and recommend the appointment and compensation of the external auditors to the Board of Directors.
- Review other audit, accounting and financial reporting matters as required.

In carrying out the above responsibilities, this Committee meets regularly with management, and with both the Company's external and internal auditors to review their respective audit plans and to review their audit findings. The Committee is readily accessible to the external and internal auditors.

The Board of Directors of each of The Great-West Life Assurance Company and Great-West Life & Annuity Insurance Company appoints an Actuary who is a Fellow of the Canadian Institute of Actuaries. The Actuary:

- Ensures that the assumptions and methods used in the valuation of policy liabilities are in accordance with accepted actuarial practice, applicable legislation and associated regulations and directives.
- Provides an opinion regarding the appropriateness of the policy liabilities at the balance sheet date to meet all policyholder obligations. Examination of supporting data for accuracy and completeness and analysis of assets for their ability to support the policy liabilities are important elements of the work required to form this opinion.

Deloitte LLP Chartered Professional Accountants, as the Company's external auditors, have audited the consolidated financial statements. The Independent Auditor's Report to the Shareholders is presented following the consolidated financial statements. Their opinion is based upon an examination conducted in accordance with Canadian generally accepted auditing standards, performing such tests and other procedures as they consider necessary in order to obtain reasonable assurance that the consolidated financial statements present fairly, in all material respects, the financial position of the Company and the results of its operations and its cash flows in accordance with IFRS.

Paul Mahon	**Garry MacNicholas**
President and Chief Executive Officer	Executive Vice-President and Chief Financial Officer

February 6, 2019

Consolidated Statements of Earnings

(in Canadian $ millions except per share amounts)

For the years ended December 31	2018	2017
		(note 2)
Income		
Premium income		
Gross premiums written	$ **39,984**	$ 38,261
Ceded premiums	**(4,523)**	(4,359)
Total net premiums	**35,461**	33,902
Net investment income (note 7)		
Regular net investment income	**6,358**	6,141
Changes in fair value through profit or loss	**(3,606)**	1,466
Total net investment income	**2,752**	7,607
Fee and other income	**5,819**	5,608
	44,032	47,117
Benefits and expenses		
Policyholder benefits		
Gross	**32,357**	30,801
Ceded	**(2,445)**	(2,214)
Total net policyholder benefits	**29,912**	28,587
Policyholder dividends and experience refunds	**1,654**	1,800
Changes in insurance and investment contract liabilities	**502**	5,256
Total paid or credited to policyholders	**32,068**	35,643
Commissions	**2,474**	2,647
Operating and administrative expenses (note 28)	**5,033**	4,705
Premium taxes	**495**	463
Financing charges (note 17)	**221**	300
Amortization of finite life intangible assets and impairment reversal (note 11)	**212**	168
Restructuring expenses (note 5)	**67**	259
Loss on assets held for sale (note 4)	**–**	202
Earnings before income taxes	**3,462**	2,730
Income taxes (note 27)	**387**	422
Net earnings before non-controlling interests	**3,075**	2,308
Attributable to non-controlling interests (note 19)	**(19)**	30
Net earnings	**3,094**	2,278
Preferred share dividends (note 21)	**133**	129
Net earnings – common shareholders	$ **2,961**	$ 2,149
Earnings per common share (note 21)		
Basic	$ **2.996**	$ 2.173
Diluted	$ **2.994**	$ 2.170

Consolidated Statements of Comprehensive Income

(in Canadian $ millions)

For the years ended December 31	2018	2017
Net earnings	**$ 3,094**	$ 2,278
Other comprehensive income		
Items that may be reclassified subsequently to Consolidated Statements of Earnings		
Unrealized foreign exchange gains (losses) on translation of foreign operations	**766**	(495)
Unrealized foreign exchange gains (losses) on euro debt designated as hedges of the net investment in foreign operations	**(50)**	(90)
Income tax (expense) benefit	**7**	12
Unrealized gains (losses) on available-for-sale assets	**(114)**	(35)
Income tax (expense) benefit	**22**	9
Realized (gains) losses on available-for-sale assets	**6**	(30)
Income tax expense (benefit)	**(1)**	5
Unrealized gains (losses) on cash flow hedges	**23**	10
Income tax (expense) benefit	**(4)**	(4)
Realized (gains) losses on cash flow hedges	**(69)**	407
Income tax expense (benefit)	**17**	(160)
Non-controlling interests	**30**	68
Income tax (expense) benefit	**(5)**	(14)
Total items that may be reclassified	**628**	(317)
Items that will not be reclassified to Consolidated Statements of Earnings		
Re-measurements on defined benefit pension and other post-employment benefit plans (note 24)	**34**	(57)
Income tax (expense) benefit	**(5)**	(8)
Non-controlling interests	**2**	12
Income tax (expense) benefit	**–**	(3)
Total items that will not be reclassified	**31**	(56)
Total other comprehensive income (loss)	**659**	(373)
Comprehensive income	**$ 3,753**	$ 1,905

Consolidated Balance Sheets

(in Canadian $ millions)

December 31	2018	2017
Assets		
Cash and cash equivalents (note 6)	$ **4,168**	$ 3,551
Bonds (note 7)	**124,862**	120,204
Mortgage loans (note 7)	**25,014**	22,185
Stocks (note 7)	**9,290**	8,864
Investment properties (note 7)	**5,218**	4,851
Loans to policyholders	**8,929**	8,280
	177,481	167,935
Assets held for sale (note 4)	**897**	169
Funds held by ceding insurers (note 8)	**9,251**	9,893
Goodwill (note 11)	**6,548**	6,179
Intangible assets (note 11)	**3,976**	3,732
Derivative financial instruments (note 29)	**417**	384
Owner occupied properties (note 12)	**731**	706
Fixed assets (note 12)	**448**	303
Other assets (note 13)	**2,567**	2,424
Premiums in course of collection, accounts and interest receivable	**5,202**	4,647
Reinsurance assets (note 14)	**6,126**	5,045
Current income taxes	**218**	134
Deferred tax assets (note 27)	**981**	930
Investments on account of segregated fund policyholders (note 15)	**209,527**	217,357
Investments on account of segregated fund policyholders held for sale (note 4)	**3,319**	–
Total assets	**$ 427,689**	$ 419,838
Liabilities		
Insurance contract liabilities (note 14)	**$ 166,720**	$ 159,524
Investment contract liabilities (note 14)	**1,711**	1,841
Liabilities held for sale (note 4)	**897**	–
Debentures and other debt instruments (note 16)	**6,459**	5,777
Funds held under reinsurance contracts	**1,367**	373
Derivative financial instruments (note 29)	**1,562**	1,336
Accounts payable	**3,262**	2,684
Other liabilities (note 18)	**3,855**	3,752
Current income taxes	**402**	464
Deferred tax liabilities (note 27)	**1,210**	1,194
Investment and insurance contracts on account of segregated fund policyholders (note 15)	**209,527**	217,357
Investment and insurance contracts on account of segregated fund policyholders held for sale (note 4)	**3,319**	–
Total liabilities	**400,291**	394,302
Equity		
Non-controlling interests (note 19)		
Participating account surplus in subsidiaries	**2,737**	2,771
Non-controlling interests in subsidiaries	**138**	164
Shareholders' equity		
Share capital (note 20)		
Preferred shares	**2,714**	2,714
Common shares	**7,283**	7,260
Accumulated surplus	**13,342**	12,098
Accumulated other comprehensive income (note 25)	**1,045**	386
Contributed surplus	**139**	143
Total equity	**27,398**	25,536
Total liabilities and equity	**$ 427,689**	$ 419,838

Approved by the Board of Directors:

Jeffrey Orr
Chair of the Board

Paul Mahon
President and Chief Executive Officer

Consolidated Statements of Changes in Equity

(in Canadian $ millions)

	December 31, 2018					
	Share capital	Contributed surplus	Accumulated surplus	Accumulated other comprehensive income (loss)	Non-controlling interests	Total equity
Balance, beginning of year	**$ 9,974**	**$ 143**	**$ 12,098**	**$ 386**	**$ 2,935**	**$ 25,536**
Change in accounting policy (note 2)	**–**	**–**	**(64)**	**–**	**–**	**(64)**
Revised balance, beginning of year	**9,974**	**143**	**12,034**	**386**	**2,935**	**25,472**
Net earnings	**–**	**–**	**3,094**	**–**	**(19)**	**3,075**
Other comprehensive income (loss)	**–**	**–**	**–**	**659**	**(27)**	**632**
	9,974	**143**	**15,128**	**1,045**	**2,889**	**29,179**
Dividends to shareholders						
Preferred shareholders (note 21)	**–**	**–**	**(133)**	**–**	**–**	**(133)**
Common shareholders	**–**	**–**	**(1,538)**	**–**	**–**	**(1,538)**
Shares exercised and issued under share-based payment plans (note 20)	**39**	**(42)**	**–**	**–**	**37**	**34**
Share-based payment plans expense	**–**	**38**	**–**	**–**	**–**	**38**
Equity settlement of Putnam share-based plans	**–**	**–**	**–**	**–**	**(58)**	**(58)**
Shares purchased and cancelled under Normal Course Issuer Bid (note 20)	**(69)**	**–**	**–**	**–**	**–**	**(69)**
Excess of redemption proceeds over stated capital per Normal Course Issuer Bid (note 20)	**53**	**–**	**(53)**	**–**	**–**	**–**
Acquisition of PanAgora non-controlling interest (note 3)	**–**	**–**	**(54)**	**–**	**(21)**	**(75)**
Acquisition of Invesco non-controlling interest (note 3)	**–**	**–**	**–**	**–**	**20**	**20**
Dilution loss on non-controlling interests	**–**	**–**	**(8)**	**–**	**8**	**–**
Balance, end of year	**$ 9,997**	**$ 139**	**$ 13,342**	**$ 1,045**	**$ 2,875**	**$ 27,398**

	December 31, 2017					
	Share capital	Contributed surplus	Accumulated surplus	Accumulated other comprehensive income (loss)	Non-controlling interests	Total equity
Balance, beginning of year	$ 9,644	$ 147	$ 11,465	$ 746	$ 3,006	$ 25,008
Net earnings	–	–	2,278	–	30	2,308
Other comprehensive income (loss)	–	–	–	(373)	(63)	(436)
	9,644	147	13,743	373	2,973	26,880
Dividends to shareholders						
Preferred shareholders (note 21)	–	–	(129)	–	–	(129)
Common shareholders	–	–	(1,453)	–	–	(1,453)
Shares exercised and issued under share-based payment plans (note 20)	143	(62)	–	–	48	129
Share-based payment plans expense	–	58	–	–	–	58
Equity settlement of Putnam share-based plans	–	–	–	–	(57)	(57)
Dividends to Putnam non-controlling interests	–	–	–	–	(26)	(26)
Shares purchased and cancelled under Normal Course Issuer Bid (note 20)	(63)	–	–	–	–	(63)
Excess of redemption proceeds over stated capital per Normal Course Issuer Bid (note 20)	50	–	(50)	–	–	–
Issuance of preferred shares (note 20)	200	–	–	–	–	200
Preferred share issue costs (note 20)	–	–	(3)	–	–	(3)
Dilution gain on non-controlling interests	–	–	3	–	(3)	–
Disposal of investment in associate	–	–	(13)	13	–	–
Balance, end of year	$ 9,974	$ 143	$ 12,098	$ 386	$ 2,935	$ 25,536

Consolidated Statements of Cash Flows

(in Canadian $ millions)

For the years ended December 31	2018	2017
Operations		
Earnings before income taxes	$ 3,462	$ 2,730
Income taxes paid, net of refunds received	(428)	(314)
Adjustments:		
Change in insurance and investment contract liabilities	(379)	4,391
Change in funds held by ceding insurers	663	857
Change in funds held under reinsurance contracts	(37)	50
Change in reinsurance assets	51	830
Changes in fair value through profit or loss	3,606	(1,466)
Other	(444)	(321)
	6,494	6,757
Financing Activities		
Issue of common shares (note 20)	39	126
Issue of preferred shares (note 20)	–	200
Share issue costs (note 20)	–	(3)
Purchased and cancelled common shares (note 20)	(69)	(63)
Issue of debentures and senior notes (note 16)	1,512	925
Repayment of debentures (note 16)	(1,096)	(1,284)
Increase in line of credit of subsidiary	19	24
Decrease in debentures and other debt instruments	(1)	(2)
Dividends paid on common shares	(1,538)	(1,453)
Dividends paid on preferred shares	(133)	(129)
	(1,267)	(1,659)
Investment Activities		
Bond sales and maturities	25,001	26,854
Mortgage loan repayments	2,808	2,837
Stock sales	2,939	3,443
Investment property sales	63	72
Change in loans to policyholders	(208)	(165)
Proceeds from assets held for sale (note 4)	169	–
Business acquisitions, net of cash and cash equivalents acquired (note 3)	(279)	(291)
Cash and cash equivalents classified as held for sale (note 4)	(112)	–
Investment in bonds	(26,453)	(30,419)
Investment in mortgage loans	(4,246)	(3,643)
Investment in stocks	(4,102)	(3,127)
Investment in investment properties	(356)	(339)
	(4,776)	(4,778)
Effect of changes in exchange rates on cash and cash equivalents	166	(28)
Increase in cash and cash equivalents	617	292
Cash and cash equivalents, beginning of year	3,551	3,259
Cash and cash equivalents, end of year	$ 4,168	$ 3,551
Supplementary cash flow information		
Interest income received	$ 5,345	$ 5,108
Interest paid	282	296
Dividend income received	266	238

(in Canadian $ millions except per share amounts)

1. Corporate Information

Great-West Lifeco Inc. (Lifeco or the Company) is a publicly listed company (Toronto Stock Exchange: GWO), incorporated and domiciled in Canada. The registered address of the Company is 100 Osborne Street North, Winnipeg, Manitoba, Canada, R3C 1V3. Lifeco is a member of the Power Corporation of Canada group of companies and its direct parent is Power Financial Corporation (Power Financial).

Lifeco is a financial services holding company with interests in the life insurance, health insurance, retirement savings, investment management and reinsurance businesses, primarily in Canada, the United States and Europe through its operating subsidiaries including The Great-West Life Assurance Company (Great-West Life), London Life Insurance Company (London Life), The Canada Life Assurance Company (Canada Life), Great-West Life & Annuity Insurance Company (Great-West Financial) and Putnam Investments, LLC (Putnam).

The consolidated financial statements (financial statements) of the Company as at and for the year ended December 31, 2018 were approved by the Board of Directors on February 6, 2019.

2. Basis of Presentation and Summary of Accounting Policies

The consolidated financial statements of the Company have been prepared in compliance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB). Consistent accounting policies were applied in the preparation of the consolidated financial statements of the subsidiaries of the Company.

Changes in Accounting Policies

Effective January 1, 2018, the Company adopted IFRS 15, *Revenue from Contracts with Customers* (IFRS 15) which replaces IAS 11, *Construction Contracts* and IAS 18, *Revenue*. The standard prescribes a five-step recognition and measurement model for revenue from contracts with customers and related costs. Revenue arising from insurance contracts, lease contracts and financial instruments are out of the scope of IFRS 15 whereas fee income on other contracts is in scope.

Fee income includes fees earned from management of segregated fund assets, proprietary mutual fund assets, record-keeping, fees earned on administrative services only Group health contracts, commissions and fees earned from management services. Under IFRS 15, the Company recognizes revenue on the transfer of services to customers for the amount that reflects the consideration expected to be received in exchange for those services promised.

As a result of changes to the treatment of costs to fulfill a contract with the customer on transition to IFRS 15, the Company applied the modified retrospective approach and recorded an adjustment for the derecognition of certain deferred sales commissions and related income tax liabilities which resulted in a decrease of $64 to opening accumulated surplus at January 1, 2018.

Comparative Figures

In addition, the Company has reclassified comparative amounts in the Consolidated Statements of Earnings for the change in presentation of certain revenues and expenses on a gross or net basis. These changes were mostly in the U.S. segment where there was a change in the principal versus agent relationship as a result of the guidance prescribed under IFRS 15 in assessing whether the entity controls the service transferred to the customer. As a result, certain balances within gross premiums written, fee and other income, operating and administrative expenses, and commissions were reclassified. These reclassifications were not significant and did not have an impact on the consolidated net earnings. The impact by line items on the Consolidated Statements of Earnings is as follows:

For the year ended December 31, 2017	Gross premiums written	Fee and other income	Commissions	Operating and administrative expenses
Increase (decrease)				
Amounts previously reported	$ 38,306	$ 5,454	$ 2,410	$ 4,833
Reclassification	(45)	154	237	(128)
Revised amount presented	$ 38,261	$ 5,608	$ 2,647	$ 4,705

The Company adopted the narrow scope amendments to IFRS for IAS 40, *Investment Property*, IFRS 2, *Share-based Payment*, IFRIC 22, *Foreign Currency Transactions and Advance Consideration* and *Annual Improvements 2014 – 2016 Cycle* for the amendments to IFRS 1, *First-time Adoption of International Financial Reporting Standards* and IAS 28, *Investments in Associates and Joint Ventures,* effective January 1, 2018. The adoption of these narrow scope amendments did not have a significant impact on the Company's financial statements.

Basis of Consolidation

The consolidated financial statements of the Company were prepared as at and for the year ended December 31, 2018 with comparative information as at and for the year ended December 31, 2017. Subsidiaries are fully consolidated from the date of acquisition, being the date on which the Company obtains control, and continue to be consolidated until the date that such control ceases. The Company has control when it has the power to direct the relevant activities, has significant exposure to variable returns from these activities and has the ability to use its power to affect the variable returns. All intercompany balances, transactions, income and expenses and profits or losses, including dividends resulting from intercompany transactions, are eliminated on consolidation.

2. Basis of Presentation and Summary of Accounting Policies (cont'd)

Use of Significant Judgments, Estimates and Assumptions

In preparation of these consolidated financial statements, management is required to make significant judgments, estimates and assumptions that affect the reported amounts of assets, liabilities, net earnings and related disclosures. Although some uncertainty is inherent in these judgments and estimates, management believes that the amounts recorded are reasonable. Key sources of estimation uncertainty and areas where significant judgments have been made are listed below and discussed throughout the notes to these consolidated financial statements including:

- Management uses judgment in determining the assets and liabilities to be included in a disposal group. The Company uses estimates in the determination of the fair value for disposal groups (note 4).
- Management uses independent qualified appraisal services to determine the fair value of investment properties, which utilize judgments and estimates. These appraisals are adjusted by applying management judgments and estimates for material changes in property cash flows, capital expenditures or general market conditions (note 7).
- Management uses internal valuation models which utilize judgments and estimates to determine the fair value of equity release mortgages. These valuations are adjusted by applying management judgments and estimates for material changes in projected asset cash flows, and discount rates (note 7).
- In the determination of the fair value of financial instruments, the Company's management exercises judgment in the determination of fair value inputs, particularly those items categorized within level 3 of the fair value hierarchy (note 10).
- Cash generating unit groupings for goodwill and indefinite life intangible assets have been determined by management as the lowest level that the assets are monitored for internal reporting purposes, which requires management judgment in the determination of the lowest level of monitoring (note 11).
- Management evaluates the future benefit for initial recognition and measurement of goodwill and intangible assets as well as testing the recoverable amounts. The determination of the carrying value and recoverable amounts of the cash generating unit groupings for goodwill and intangible assets relies upon the determination of fair value or value-in-use using valuation methodologies (note 11).
- Judgments are used by management in determining whether deferred acquisition costs and deferred income reserves can be recognized on the Consolidated Balance Sheets. Deferred acquisition costs are recognized if management determines the costs meet the definition of an asset and are incremental and related to the issuance of the investment contract. Deferred income reserves are amortized on a straight-line basis over the term of the policy (notes 13 and 18).
- Management uses judgment to evaluate the classification of insurance and reinsurance contracts to determine whether these arrangements should be accounted for as insurance, investment or service contracts.
- The actuarial assumptions, such as interest rates, inflation, policyholder behaviour, mortality and morbidity of policyholders, used in the valuation of insurance and certain investment contract liabilities under the Canadian Asset Liability Method require significant judgment and estimation (note 14).
- The actuarial assumptions used in determining the expense and benefit obligations for the Company's defined benefit pension plans and other post-employment benefits requires significant judgment and estimation. Management reviews previous experience of its plan members and market conditions including interest rates and inflation rates in evaluating the assumptions used in determining the expense for the current year (note 24).
- The Company operates within various tax jurisdictions where significant management judgments and estimates are required when interpreting the relevant tax laws, regulations and legislation in the determination of the Company's tax provisions and the carrying amounts of its tax assets and liabilities (note 27).
- Management applies judgment in assessing the recoverability of the deferred income tax asset carrying values based on future years' taxable income projections (note 27).
- Legal and other provisions are recognized resulting from a past event which, in the judgment of management, has resulted in a probable outflow of economic resources which would be passed to a third-party to settle the obligation. Management uses judgment to evaluate the possible outcomes and risks in determining the best estimate of the provision at the balance sheet date (note 30).
- The operating segments of the Company, which are the segments reviewed by the Company's Chief Executive Officer to assess performance and allocate resources within the Company, are aligned with the Company's geographic operations. Management applies judgment in the aggregation of the business units into the Company's operating segments (note 32).
- The Company consolidates all subsidiaries and entities which management determines that the Company controls. Control is evaluated on the ability of the Company to direct the activities of the subsidiary or entity to derive variable returns and management uses judgment in determining whether control exists. Judgment is exercised in the evaluation of the variable returns and in determining the extent to which the Company has the ability to exercise its power to generate variable returns.
- Management uses judgments, such as the determination of the risks and benefits associated with the transaction that are used in determining whether the Company retains the primary obligation with a client in sub-advisor arrangements. Where the Company retains the risks and benefits, revenue and expenses are recorded on a gross basis.
- Within the Consolidated Statements of Cash Flows, purchases and sales of portfolio investments are recorded within investment activities due to management's judgment that these investing activities are long-term in nature.
- The results of the Company reflect management's judgments regarding the impact of prevailing global credit, equity and foreign exchange market conditions. The provision for future credit losses within the Company's insurance contract liabilities relies upon investment credit ratings. The Company's practice is to use third-party independent credit ratings where available. Management judgment is required when setting credit ratings for instruments that do not have a third-party rating.

The significant accounting policies are as follows:

(a) Portfolio Investments

Portfolio investments include bonds, mortgage loans, stocks and investment properties. Portfolio investments are classified as fair value through profit or loss, available-for-sale, held-to-maturity, loans and receivables, equity-method investments or as non-financial instruments based on management's intention relating to the purpose and nature of the instrument or characteristics of the investment. The Company has not classified any investments as held-to-maturity.

Investments in bonds and stocks normally actively traded on a public market or where fair value can be reliably measured are either designated or classified as fair value through profit or loss or classified as available-for-sale on a trade date basis. Equity release mortgages are designated as fair value through profit or loss. A financial asset is designated as fair value through profit or loss on initial recognition if it eliminates or significantly reduces an accounting mismatch. Changes in the fair value of financial assets designated as fair value through profit or loss are generally offset by changes in insurance contract liabilities, since the measurement of insurance contract liabilities is determined with reference to the assets supporting the liabilities. A financial asset is classified as fair value through profit or loss on initial recognition if it is part of a portfolio that is actively traded for the purpose of earning investment income. Fair value through profit or loss investments are recognized at fair value on the Consolidated Balance Sheets with realized and unrealized gains and losses reported in the Consolidated Statements of Earnings. Available-for-sale investments are recognized at fair value on the Consolidated Balance Sheets with unrealized gains and losses recorded in other comprehensive income. Realized gains and losses on available-for-sale investments are reclassified from other comprehensive income and recorded in the Consolidated Statements of Earnings when the investment is sold. Interest income earned on both fair value through profit or loss and available-for-sale bonds is recorded as net investment income in the Consolidated Statements of Earnings.

Investments in stocks where a fair value cannot be measured reliably are classified as available–for–sale and carried at cost. Investments in stocks for which the Company exerts significant influence over but does not control are accounted for using the equity method of accounting. Investments in stocks over which the Company exerts significant influence but does not control include the Company's investment in an affiliated company, IGM Financial Inc. (IGM), a member of the Power Financial group of companies.

Investments in mortgages and bonds not normally actively traded on a public market are classified as loans and receivables and are carried at amortized cost net of any allowance for credit losses. Interest income earned and realized gains and losses on the sale of investments classified as loans and receivables are recorded in the Consolidated Statements of Earnings and included in net investment income.

Investment properties are real estate held to earn rental income or for capital appreciation. Investment properties are initially measured at cost and subsequently carried at fair value on the Consolidated Balance Sheets. All changes in fair value are recorded as net investment income in the Consolidated Statements of Earnings. Properties held to earn rental income or for capital appreciation that have an insignificant portion that is owner occupied or where there is no intent to occupy on a long-term basis are classified as investment properties. Properties that do not meet these criteria are classified as owner occupied properties. Property that is leased that would otherwise be classified as investment property if owned by the Company is also included within investment properties.

Fair Value Measurement

Financial instrument carrying values necessarily reflect the prevailing market liquidity and the liquidity premiums embedded within the market pricing methods that the Company relies upon.

Fair value movement on the assets supporting insurance contract liabilities is a major factor in the movement of insurance contract liabilities. Changes in the fair value of bonds designated or classified as fair value through profit or loss that support insurance and investment contract liabilities are largely offset by corresponding changes in the fair value of liabilities except when the bond has been deemed impaired.

The following is a description of the methodologies used to value instruments carried at fair value:

Bonds – Fair Value Through Profit or Loss and Available-for-Sale

Fair values for bonds classified and designated as fair value through profit or loss or available-for-sale are determined with reference to quoted market bid prices primarily provided by third-party independent pricing sources. Where prices are not quoted in a normally active market, fair values are determined by valuation models. The Company maximizes the use of observable inputs when measuring fair value. The Company obtains quoted prices in active markets, when available, for identical assets at the balance sheet date to measure bonds at fair value in its fair value through profit or loss and available-for-sale portfolios.

The Company estimates the fair value of bonds not traded in active markets by referring to actively traded securities with similar attributes, dealer quotations, matrix pricing methodology, discounted cash flow analyses and/or internal valuation models. This methodology considers such factors as the issuer's industry, the security's rating, term, coupon rate and position in the capital structure of the issuer, as well as, yield curves, credit curves, prepayment rates and other relevant factors. For bonds that are not traded in active markets, valuations are adjusted to reflect illiquidity, and such adjustments generally are based on available market evidence. In the absence of such evidence, management's best estimate is used.

2. Basis of Presentation and Summary of Accounting Policies (cont'd)

Bonds and Mortgages – Loans and Receivables

For disclosure purposes only, fair values for bonds and mortgages classified as loans and receivables are determined by discounting expected future cash flows using current market rates for similar instruments. Valuation inputs typically include benchmark yields and risk-adjusted spreads based on current lending activities and market activity.

Equity Release Mortgages – Fair Value Through Profit or Loss

There are no market observable prices for equity release mortgages; therefore an internal valuation model is used discounting expected future cash flows and includes considering the embedded no-negative equity guarantee. Inputs to the model include market observable inputs such as benchmark yields and risk-adjusted spreads. Non market observable inputs include property growth and volatility rates, expected rates of voluntary redemptions, death, moving to long term care and interest cessation assumptions and the value of the no negative equity guarantee.

Stocks – Fair Value Through Profit or Loss and Available-for-Sale

Fair values for stocks traded on an active market are generally determined by the last bid price for the security from the exchange where it is principally traded. Fair values for stocks for which there is no active market is typically based upon alternative valuation techniques such as discounted cash flow analysis, review of price movement relative to the market and utilization of information provided by the underlying investment manager. The Company maximizes the use of observable inputs when measuring fair value. The Company obtains quoted prices in active markets, when available, for identical assets at the balance sheet date to measure stocks at fair value in its fair value through profit or loss and available-for-sale portfolios.

Investment Properties

Fair values for investment properties are determined using independent qualified appraisal services and include management adjustments for material changes in property cash flows, capital expenditures or general market conditions in the interim period between appraisals. The determination of the fair value of investment property requires the use of estimates including future cash flows (such as future leasing assumptions, rental rates, capital and operating expenditures) and discount, reversionary and overall capitalization rates applicable to the asset based on current market conditions. Investment property under construction is valued at fair value if such values can be reliably determined; otherwise they are recorded at cost.

Impairment

Investments are reviewed regularly on an individual basis to determine impairment status. The Company considers various factors in the impairment evaluation process, including, but not limited to, the financial condition of the issuer, specific adverse conditions affecting an industry or region, decline in fair value not related to interest rates, bankruptcy or defaults, and delinquency in payments of interest or principal.

Investments are deemed to be impaired when there is objective evidence that timely collection of future cash flows can no longer be reliably estimated. The fair value of an investment is not a definitive indicator of impairment, as it may be significantly influenced by other factors including the remaining term to maturity and liquidity of the asset; however, market price is taken into consideration when evaluating impairment.

For impaired mortgages and bonds classified as loans and receivables, provisions are established or write-offs made to adjust the carrying value to the net realizable amount. Wherever possible the fair value of collateral underlying the loans or observable market price is used to establish net realizable value. For impaired available-for-sale bonds recorded at fair value, the accumulated loss recorded in accumulated other comprehensive income is reclassified to net investment income. Impairments on available-for-sale debt instruments are reversed if there is objective evidence that a permanent recovery has occurred. All gains and losses on bonds classified or designated as fair value through profit or loss are already recorded in net investment income; therefore a reduction due to impairment of these assets will be recorded in net investment income.

Securities Lending

The Company engages in securities lending through its securities custodians as lending agents. Loaned securities are not derecognized, and continue to be reported within invested assets, as the Company retains substantial risks and rewards and economic benefits related to the loaned securities.

(b) Transaction Costs

Transaction costs are expensed as incurred for financial instruments classified as fair value through profit or loss. Transaction costs for financial assets classified as available-for-sale or loans and receivables are added to the value of the instrument at acquisition and taken into net earnings using the effective interest method. Transaction costs for financial liabilities classified as other than fair value through profit or loss are included in the value of the instrument issued and taken into net earnings using the effective interest method.

(c) Cash and Cash Equivalents

Cash and cash equivalents comprise cash, current operating accounts, overnight bank and term deposits with maturities of three months or less held for the purpose of meeting short-term cash requirements. Net payments in transit and overdraft bank balances are included in other liabilities.

(d) Trading Account Assets

Trading account assets consist of investments in sponsored funds, open ended investment companies and sponsored unit-trusts, which are carried at fair value based on the net asset value of these funds. Investments in these assets are included in other assets on the Consolidated Balance Sheets with realized and unrealized gains and losses reported in the Consolidated Statements of Earnings.

(e) Debentures and Other Debt Instruments and Capital Trust Securities

Debentures and other debt instruments and capital trust securities are initially recorded on the Consolidated Balance Sheets at fair value and subsequently carried at amortized cost using the effective interest method with amortization expense recorded in financing charges in the Consolidated Statements of Earnings. These liabilities are derecognized when the obligation is cancelled or redeemed.

(f) Other Assets and Other Liabilities

Other assets, which include prepaid expenses, deferred acquisition costs, finance leases receivable and miscellaneous other assets, are measured at cost or amortized cost. Other liabilities, which include deferred income reserves, bank overdraft and other miscellaneous liabilities are measured at cost or amortized cost.

Provisions are recognized within other liabilities when the Company has a present obligation, either legal or constructive, resulting from a past event, and in management's judgment, it is probable that an outflow of economic resources will be required to settle the obligation and a reliable estimate can be made of the amount. The amount recognized for provisions are management's best estimate at the balance sheet date. The Company recognizes a provision for restructuring when a detailed formal plan for the restructuring has been established and that the plan has raised a valid expectation in those affected that the restructuring will occur.

Pension and other post-employment benefits also included within other assets and other liabilities are measured in accordance with note 2(x).

(g) Disposal Group Classified As Held For Sale

Disposal groups are classified as held for sale when the carrying amount will be recovered through a sale transaction rather than continuing use. The fair value of a disposal group is measured at the lower of its carrying amount and fair value less costs to sell. Individual assets and liabilities in a disposal group not subject to these measurement requirements include financial assets, investment properties and insurance contract liabilities. These assets and liabilities are measured in accordance with the relevant accounting policies described for those assets and liabilities included in this note before the disposal group as a whole is measured to the lower of its carrying amount and fair value less cost to sell. Any impairment loss for the disposal group is recognized as a reduction to the carrying amount for the portion of the disposal group under the measurement requirements for IFRS 5, *Non-Current Assets Held for Sale and Discontinued Operations*.

Disposal group assets and liabilities classified as held for sale are presented separately on the Company's Consolidated Balance Sheets. Gains and losses from disposal groups held for sale are presented separately in the Company's Consolidated Statements of Earnings.

(h) Derivative Financial Instruments

The Company uses derivative products as risk management instruments to hedge or manage asset, liability and capital positions, including fee and investment income. The Company's policy guidelines prohibit the use of derivative instruments for speculative trading purposes.

The Company includes disclosure of the maximum credit risk, future credit exposure, credit risk equivalent and risk weighted equivalent in note 29 as prescribed by the Office of the Superintendent of Financial Institutions (OSFI) in Canada.

All derivatives including those that are embedded in financial and non-financial contracts that are not closely related to the host contracts are recorded at fair value on the Consolidated Balance Sheets. The method of recognizing unrealized and realized fair value gains and losses depends on whether the derivatives are designated as hedging instruments. For derivatives that are not designated as hedging instruments, unrealized and realized gains and losses are recorded in net investment income in the Consolidated Statements of Earnings. For derivatives designated as hedging instruments, unrealized and realized gains and losses are recognized according to the nature of the hedged item.

Derivatives are valued using market transactions and other market evidence whenever possible, including market based inputs to models, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. When models are used, the selection of a particular model to value a derivative depends on the contractual terms of, and specific risks inherent in, the instrument, as well as the availability of pricing information in the market. The Company generally uses similar models to value similar instruments. Valuation models require a variety of inputs, including contractual terms, market prices and rates, yield curves, credit curves, measures of volatility, prepayment rates and correlations of such inputs.

To qualify for hedge accounting, the relationship between the hedged item and the hedging instrument must meet several strict conditions on documentation, probability of occurrence, hedge effectiveness and reliability of measurement. If these conditions are not met, the relationship does not qualify for hedge accounting treatment and both the hedged item and the hedging instrument are reported independently as if there was no hedging relationship.

2. Basis of Presentation and Summary of Accounting Policies (cont'd)

Where a hedging relationship exists, the Company documents all relationships between hedging instruments and hedged items, as well as its risk management objectives and strategy for undertaking various hedge transactions. This process includes linking derivatives that are used in hedging transactions to specific assets and liabilities on the Consolidated Balance Sheets or to specific firm commitments or forecasted transactions. The Company also assesses, both at the hedge's inception and on an ongoing basis, whether derivatives that are used in hedging transactions are effective in offsetting changes in fair values or cash flows of hedged items. Hedge effectiveness is reviewed quarterly through correlation testing. Hedge accounting is discontinued when the hedging no longer qualifies for hedge accounting.

Derivatives not designated as hedges for accounting purposes

For derivative investments not designated as accounting hedges, changes in fair value are recorded in net investment income.

Fair value hedges

For fair value hedges, changes in fair value of both the hedging instrument and the hedged risk are recorded in net investment income and consequently any ineffective portion of the hedge is recorded immediately in net investment income.

The Company currently has no instruments designated as fair value hedges.

Cash flow hedges

For cash flow hedges, the effective portion of the changes in fair value of the hedging instrument is recorded in the same manner as the hedged item while the ineffective portion is recognized immediately in net investment income. Gains and losses that accumulate in other comprehensive income are recorded in net investment income in the same period the hedged item affects net earnings. Gains and losses on cash flow hedges are immediately reclassified from other comprehensive income to net investment income if and when it is probable that a forecasted transaction is no longer expected to occur.

The Company currently uses interest rate swaps and cross-currency swaps designated as cash flow hedges.

Net investment hedges

For net investment hedges, the effective portion of changes in the fair value of the hedging instrument are recorded in other comprehensive income while the ineffective portion is recognized immediately in net investment income. The unrealized foreign exchange gains (losses) on the instruments are recorded within accumulated other comprehensive income and will be reclassified into net earnings when the Company disposes of the foreign operation.

The Company currently has instruments designated as net investment hedges.

(i) 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. Embedded derivatives are treated as separate contracts and are recorded at fair value if their economic characteristics and risks are not closely related to those of the host contract and the host contract is not itself recorded at fair value through the Consolidated Statements of Earnings. Embedded derivatives that meet the definition of an insurance contract are accounted for and measured as an insurance contract.

(j) Foreign Currency Translation

The Company operates with multiple functional currencies. The Company's consolidated financial statements are presented in Canadian dollars as this presentation is most meaningful to financial statement users. For those subsidiaries with different functional currencies, exchange rate differences arising from the translation of monetary items that form part of the net investment in the foreign operation are recorded in unrealized foreign exchange gains (losses) on translation of foreign operations in other comprehensive income.

For the purpose of presenting consolidated financial statements, assets and liabilities are translated into Canadian dollars at the rate of exchange prevailing at the balance sheet dates and all income and expense items are translated at an average of daily rates. Unrealized foreign currency translation gains and losses on translation of the Company's net investment in its foreign operations are presented separately as a component of other comprehensive income. Unrealized gains and losses will be recognized proportionately in net investment income in the Consolidated Statements of Earnings when there has been a disposal of the investment in the foreign operations.

Foreign currency translation gains and losses on foreign currency transactions of the Company are included in net investment income.

(k) Loans to Policyholders

Loans to policyholders are classified as loans and receivables and measured at amortized cost. Loans to policyholders are shown at their unpaid principal balance and are fully secured by the cash surrender values of the policies. Carrying value of loans to policyholders approximates their fair value.

(l) Reinsurance Contracts

The Company, in the normal course of business, is a user of reinsurance in order to limit the potential for losses arising from certain exposures and a provider of reinsurance. Assumed reinsurance refers to the acceptance of certain insurance risks by the Company underwritten by another company. Ceded reinsurance refers to the transfer of insurance risk, along with the respective premiums, to one or more reinsurers who will share the risks. To the extent that assuming reinsurers are unable to meet their obligations, the Company remains liable to its policyholders for the portion reinsured. Consequently, allowances are made for reinsurance contracts which are deemed uncollectible.

Reinsurance contracts are insurance contracts and undergo the classification as described within the Insurance and Investment Contract Liabilities section of this note. Assumed reinsurance premiums, commissions and claim settlements, as well as the reinsurance assets associated with insurance and investment contracts, are accounted for in accordance with the terms and conditions of the underlying reinsurance contract. Reinsurance assets are reviewed for impairment on a regular basis for any events that may trigger impairment. The Company considers various factors in the impairment evaluation process, including but not limited to, collectability of amounts due under the terms of the contract. The carrying amount of a reinsurance asset is adjusted through an allowance account with any impairment loss being recorded in the Consolidated Statements of Earnings.

Any gains or losses on buying reinsurance are recognized in the Consolidated Statements of Earnings immediately at the date of purchase in accordance with the Canadian Asset Liability Method.

Assets and liabilities related to reinsurance are reported on a gross basis on the Consolidated Balance Sheets. The amount of liabilities ceded to reinsurers is estimated in a manner consistent with the claim liability associated with reinsured risks.

(m) Funds Held by Ceding Insurers/Funds Held Under Reinsurance Contracts

On the asset side, funds held by ceding insurers are assets that would normally be paid to the Company but are withheld by the cedant to reduce potential credit risk. Under certain forms of reinsurance contracts it is customary for the cedant to retain amounts on a funds withheld basis supporting the insurance or investment contract liabilities ceded. For the funds withheld assets where the underlying asset portfolio is managed by the Company, the credit risk is retained by the Company. The funds withheld balance where the Company assumes the credit risk is measured at the fair value of the underlying asset portfolio with the change in fair value recorded in net investment income. See note 8 for funds held by ceding insurers that are managed by the Company. Other funds held by ceding insurers are general obligations of the cedant and serve as collateral for insurance contract liabilities assumed from cedants. Funds withheld assets on these contacts do not have fixed maturity dates, their release generally being dependent on the run-off of the corresponding insurance contract liabilities.

On the liability side, funds held under reinsurance contracts consist mainly of amounts retained by the Company from ceded business written on a funds withheld basis. The Company withholds assets related to ceded insurance contract liabilities in order to reduce credit risk.

(n) Business Combinations, Goodwill and Intangible Assets

Business combinations are accounted for using the acquisition method. The Company identifies and classifies, in accordance with the Company's accounting policies, all assets acquired and liabilities assumed as at the acquisition date. Goodwill represents the excess of purchase consideration over the fair value of net assets of the acquired subsidiaries of the Company. Following initial recognition, goodwill is measured at cost less accumulated impairment losses.

Intangible assets represent finite life and indefinite life intangible assets of acquired subsidiaries of the Company and software acquired or internally developed by the Company. Finite life intangible assets include the value of technology/software, certain customer contracts and distribution channels. These finite life intangible assets are amortized over their estimated useful lives, typically ranging between 3 and 30 years.

Indefinite life intangible assets include brands and trademarks, certain customer contracts and the shareholders' portion of acquired future participating account profits. Amounts are classified as indefinite life intangible assets when based on an analysis of all the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the Company. The identification of indefinite life intangible assets is made by reference to relevant factors such as product life cycles, potential obsolescence, industry stability and competitive position. Following initial recognition, indefinite life intangible assets are measured at cost less accumulated impairment losses.

Impairment Testing

Goodwill and indefinite life intangible assets are tested for impairment annually or more frequently if events indicate that impairment may have occurred. Intangible assets that were previously impaired are reviewed at each reporting date for evidence of reversal. In the event that certain conditions have been met, the Company would be required to reverse the impairment loss or a portion thereof.

Goodwill and indefinite life intangible assets have been allocated to cash generating unit groupings, representing the lowest level that the assets are monitored for internal reporting purposes. Goodwill and indefinite life intangible assets are tested for impairment by comparing the carrying value of each cash generating unit grouping containing the assets to its recoverable amount. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount.

The recoverable amount is the higher of the asset's fair value less costs of disposal and value-in-use.

Finite life intangible assets are reviewed annually to determine if there are indicators of impairment and assess whether the amortization periods and methods are appropriate. If indicators of impairment have been identified, a test for impairment is performed and then the amortization of these assets is adjusted or impairment is recognized as necessary.

2. Basis of Presentation and Summary of Accounting Policies (cont'd)

(o) Revenue Recognition

Premiums for all types of insurance contracts, and contracts with limited mortality or morbidity risk, are generally recognized as revenue when due and collection is reasonably assured.

Interest income on bonds and mortgages is recognized and accrued using the effective yield method.

Dividend income is recognized when the right to receive payment is established. This is the ex-dividend date for listed stocks, and usually the notification date or date when the shareholders have approved the dividend for private equity instruments.

Investment property income includes rents earned from tenants under lease agreements and property tax and operating cost recoveries. Rental income leases with contractual rent increases and rent-free periods are recognized on a straight-line basis over the term of the lease.

Fee income includes fees earned from management of segregated fund assets, proprietary mutual fund assets, record-keeping, fees earned on administrative services only Group health contracts, commissions and fees earned from management services. Fee and other income is recognized on the transfer of services to customers for the amount that reflects the consideration expected to be received in exchange for those services promised.

The Company has sub-advisor arrangements where the Company retains the primary obligation with the client; as a result, fee income earned is reported on a gross basis with the corresponding sub-advisor expense recorded in operating and administrative expenses.

(p) Owner Occupied Properties and Fixed Assets

Property held for own use and fixed assets are carried at cost less accumulated depreciation and impairments. Depreciation is expensed to write-off the cost of assets, over their estimated useful lives, using the straight-line method, on the following bases:

Owner occupied properties	15 – 20 years
Furniture and fixtures	5 – 10 years
Other fixed assets	3 – 10 years

Depreciation methods, useful lives and residual values are reviewed at least annually and adjusted if necessary.

(q) Deferred Acquisition Costs

Included in other assets are deferred acquisition costs relating to investment contracts. These are recognized as assets if the costs are incremental and incurred due to the contract being issued and are primarily amortized on a straight-line basis over the policy term, not to exceed 20 years.

(r) Segregated Funds

Segregated funds assets and liabilities arise from contracts where all financial risks associated with the related assets are borne by policyholders and are presented separately on the Consolidated Balance Sheets. The assets and liabilities are set equal to the fair value of the underlying asset portfolio. Investment income and changes in fair value of the segregated fund assets are offset by a corresponding change in the segregated fund liabilities.

(s) Insurance and Investment Contract Liabilities

Contract Classification

When significant insurance risk exists, the Company's products are classified at contract inception as insurance contracts, in accordance with IFRS 4, *Insurance Contracts* (IFRS 4). Significant insurance risk exists when the Company agrees to compensate policyholders or beneficiaries of the contract for specified uncertain future events that adversely affect the policyholder and whose amount and timing is unknown. Refer to note 14 for discussion of insurance risk.

In the absence of significant insurance risk, the contract is classified as an investment contract or service contract. Investment contracts with discretionary participating features are accounted for in accordance with IFRS 4 and investment contracts without discretionary participating features are accounted for in accordance with IAS 39, *Financial Instruments: Recognition & Measurement.* The Company has not classified any contracts as investment contracts with discretionary participating features.

Investment contracts may be reclassified as insurance contracts after inception if insurance risk becomes significant. A contract that is classified as an insurance contract at contract inception remains as such until all rights and obligations under the contract are extinguished or expire.

Investment contracts are contracts that carry financial risk, which is the risk of a possible future change in one or more of the following: interest rate, commodity price, foreign exchange rate, or credit rating. Refer to note 9 for discussion of Financial Instruments Risk Management.

Measurement

Insurance contract liabilities represent the amounts required, in addition to future premiums and investment income, to provide for future benefit payments, policyholder dividends, commission and policy administrative expenses for all insurance and annuity policies in force with the Company. The Appointed Actuaries of the Company's subsidiary companies are responsible for determining the amount of the liabilities to make appropriate provisions for the Company's obligations to policyholders. The Appointed Actuaries determine the liabilities for insurance contracts using generally accepted actuarial practices, according to the standards established by the Canadian Institute of Actuaries. The valuation uses the Canadian Asset Liability Method. This method involves the projection of future events in order to determine the amount of assets that must be set aside currently to provide for all future obligations and involves a significant amount of judgment.

In the computation of insurance contract liabilities, valuation assumptions have been made regarding rates of mortality/morbidity, investment returns, levels of operating expenses, rates of policy termination and rates of utilization of elective policy options or provisions. The valuation assumptions use best estimates of future experience together with a margin for adverse deviation. These margins are necessary to provide for possibilities of mis-estimation and/for future deterioration in the best estimate assumptions and provide reasonable assurance that insurance contract liabilities cover a range of possible outcomes. Margins are reviewed periodically for continued appropriateness.

Investment contract liabilities are measured at fair value determined using discounted cash flows utilizing the yield curves of financial instruments with similar cash flow characteristics.

(t) Deferred Income Reserves

Included in other liabilities are deferred income reserves relating to investment contracts. These are amortized on a straight-line basis to recognize the initial policy fees over the policy term, not to exceed 20 years.

(u) Income Taxes

The income tax expense for the period represents the sum of current income tax and deferred income tax. Income tax is recognized as an expense or income in profit or loss except to the extent that it relates to items that are recognized outside profit or loss (whether in other comprehensive income or directly in equity), in which case the income tax is also recognized outside profit or loss.

Current Income Tax

Current income tax is based on taxable income for the year. Current income tax liabilities (assets) for the current and prior periods are measured at the amount expected to be paid to (recovered from) the taxation authorities using the tax rates that have been enacted or substantively enacted at the balance sheet date in each respective jurisdiction. Current income tax assets and current income tax liabilities are offset if a legally enforceable right exists to offset the recognized amounts and the entity intends either to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

A provision for tax uncertainties which meet the probable threshold for recognition is measured based on the probability weighted average approach. The provision for tax uncertainties will be classified as current or deferred based on how a disallowance of the underlying uncertain tax treatment would impact the tax provision accrual as of the balance sheet date.

Deferred Income Tax

Deferred income tax is the tax expected to be payable or recoverable on differences arising between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable income and is accounted for using the balance sheet liability method. Deferred income tax liabilities are generally recognized for all taxable temporary differences and deferred income tax assets are recognized to the extent that it is probable that taxable profits will be available against which deductible temporary differences, unused tax losses and carryforwards can be utilized.

Recognition is based on the fact that it is probable that the entity will have taxable profits and/or tax planning opportunities available to allow the deferred income tax asset to be utilized. Changes in circumstances in future periods may adversely impact the assessment of the recoverability. The uncertainty of the recoverability is taken into account in establishing the deferred income tax assets. The Company's annual financial planning process provides a significant basis for the measurement of deferred income tax assets.

Deferred income tax assets and liabilities are measured at the tax rates expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the balance sheet date. Deferred income tax assets and deferred income tax liabilities are offset if a legally enforceable right exists to net current income tax assets against current income tax liabilities and the deferred income taxes relate to the same taxable entity and the same taxation authority.

The carrying amount of deferred income tax assets is reviewed at each balance sheet date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred income tax asset to be utilized. Unrecognized deferred income tax assets are reassessed at each balance sheet date and are recognized to the extent that it has become probable that future taxable profit will allow the deferred income tax asset to be recovered.

Deferred income tax liabilities are recognized for taxable temporary differences arising on investments in subsidiaries and associates, except where the group controls the timing of the reversal of the temporary difference and it is probable that the temporary differences will not reverse in the foreseeable future.

(v) Policyholder Benefits

Policyholder benefits include benefits and claims on life insurance contracts, maturity payments, annuity payments and surrenders. Gross benefits and claims for life insurance contracts include the cost of all claims arising during the year and settlement of claims. Death claims and surrenders are recorded on the basis of notifications received. Maturities and annuity payments are recorded when due.

(w) Repurchase Agreements

The Company accounts for certain forward settling to be announced "TBA" security transactions as derivatives as the Company does not regularly accept delivery of such securities when issued.

(x) Pension Plans and Other Post-Employment Benefits

The Company's subsidiaries maintain contributory and non-contributory defined benefit pension plans for certain employees and advisors. The Company's subsidiaries also provide post-employment health, dental and life insurance benefits to eligible employees, advisors and their dependents.

The present value of the defined benefit obligations and the related current service cost is determined using the projected unit credit method (note 24). Pension plan assets are recorded at fair value.

For the defined benefit plans of the Company's subsidiaries, service costs and net interest costs are recognized in the Consolidated Statements of Earnings. Service costs include current service cost, administration expenses, past service costs and the impact of curtailments and settlements. To determine the net interest costs (income) recognized in the Consolidated Statements of Earnings, the Company's subsidiaries apply a discount rate to the net benefit liability (asset), where the discount rate is determined by reference to market yields at the beginning of the year on high quality corporate bonds.

For the defined benefit plans of the Company's subsidiaries, re-measurements of the net defined benefit liability (asset) due to asset returns less (greater) than interest income, actuarial losses (gains) and changes in the asset ceiling are recognized in the Consolidated Statements of Comprehensive Income.

The Company's subsidiaries also maintain defined contribution pension plans for certain employees and advisors. For the defined contribution plans of the Company's subsidiaries, the current service costs are recognized in the Consolidated Statements of Earnings.

(y) Equity

Financial instruments issued by the Company are classified as share capital if they represent a residual interest in the assets of the Company. Preferred share capital is classified as equity if it is non-redeemable, or retractable only at the Company's option and any dividends are discretionary. Incremental costs that are directly attributable to the issue of share capital are recognized as a deduction from equity, net of income tax.

Contributed surplus represents the vesting expense on unexercised equity instruments under share-based payment plans.

Accumulated other comprehensive income (loss) represents the total of the unrealized foreign exchange gains (losses) on translation of foreign operations, the unrealized foreign exchange gains (losses) on euro debt designated as a hedge of the net investment of foreign operations, the unrealized gains (losses) on available-for-sale assets, the unrealized gains (losses) on cash flow hedges, and the re-measurements on defined benefit pension and other post-employment benefit plans net of tax, where applicable.

Non-controlling interests in subsidiaries represents the proportion of equity that is attributable to minority shareholders.

Participating account surplus in subsidiaries represents the proportion of equity attributable to the participating account of the Company's subsidiaries.

(z) Share-Based Payments

The Company provides share-based compensation to certain employees and Directors of the Company and its subsidiaries.

The Company follows the fair value based method of accounting for the valuation of compensation expense for shares and share options granted to employees under its stock option plans (note 23). This share-based payment expense is recognized in operating and administrative expenses in the Consolidated Statements of Earnings and as an increase to contributed surplus over the vesting period of the granted options. When options are exercised, the proceeds received, along with the amount in contributed surplus, are transferred to share capital.

The Company and certain of its subsidiaries have established Deferred Share Unit Plans (DSU Plans) in which the Directors of the Company participate. Units issued under the DSU Plans vest when granted. The Company recognizes an increase in operating and administrative expenses for the units granted under the DSU Plans. The Company recognizes a liability for units granted under the DSU Plans which is re-measured at each reporting period based on the market value of the Company's common shares.

Certain employees of the Company are entitled to participate in the Performance Share Unit Plan (PSU Plan). Units issued under the Performance Share Unit Plan vest over a three year period. The Company uses the fair value method to recognize compensation expense for the units granted under the plan over the vesting period with a corresponding increase in the liability based on the market value of the Company's common shares.

The Company has an Employee Share Ownership Program (ESOP) where, subject to certain conditions being met, the Company will match contributions up to a maximum amount. The Company's contributions are expensed within operating and administrative expenses as incurred.

(aa) Earnings Per Common Share

Earnings per common share is calculated using net earnings after preferred share dividends and the weighted average number of common shares outstanding. Diluted earnings per share is calculated by adjusting common shareholders' net earnings and the weighted average number of common shares outstanding for the effects of all potential dilutive common shares assuming that all convertible instruments are converted and outstanding options are exercised.

(ab) Leases

Leases that do not transfer substantially all the risks and rewards of ownership are classified as operating leases. Payments made under operating leases, where the Company is the lessee, are charged to net earnings over the period of use.

Where the Company is the lessor under an operating lease for its investment property, the assets subject to the lease arrangement are presented within the Consolidated Balance Sheets. Income from these leases is recognized in the Consolidated Statements of Earnings on a straight-line basis over the lease term.

Investments in a lease that transfers substantially all the risks and rewards of ownership to the lessee are classified as a finance lease. The Company is the lessor under a finance lease and the investment is recognized as a receivable at an amount equal to the net investment in the lease, which is represented as the present value of the minimum lease payments due from the lessee and is presented within the Consolidated Balance Sheets. Payments received from the lessee are apportioned between the recognition of finance lease income and the reduction of the finance lease receivable. Income from the finance leases is recognized in the Consolidated Statements of Earnings at a constant periodic rate of return on the Company's net investment in the finance lease.

(ac) Operating Segments

Operating segments have been identified based on internal reports that are regularly reviewed by the Company's Chief Executive Officer to allocate resources and assess performance of segments. The Company's reportable operating segments are categorized by geographic region and include Canada, the United States and Europe. The Canada segment comprises the Individual Customer and Group Customer business units. Great-West Financial and Putnam are reported in the United States segment. The Europe segment comprises Insurance & Annuities and Reinsurance. The Lifeco Corporate segment represents activities and transactions that are not directly attributable to the measurement of the operating segments of the Company.

(ad) Future Accounting Policies

Standard	Summary of Future Changes
IFRS 16 – *Leases*	In January 2016, the IASB issued IFRS 16, *Leases*, with an effective date of January 1, 2019, which introduced new guidance for identifying leases as well as the accounting, measurement and presentation of leases by the lessee. The lessee now recognizes a liability for the future lease payments to be made for each lease. A right-of-use asset is also recognized and amortized over the useful life. As a result, the previous distinction between operating and finance leases no longer applies. In contrast to the significant changes for lessees, the new standard will retain many key aspects of the current lessor accounting model. With respect to first time application of IFRS 16, the Company can choose to apply the standard using the full retrospective approach or modified retrospective approach. The Company plans on using the modified retrospective approach. The Company will be adopting the standard on its effective date of January 1, 2019. The Company is in the process of finalizing its transition approach. The presentation of right-of-use assets and lease liabilities on the balance sheet will be within other assets and other liabilities respectively. The Company anticipates the adoption of the standard to result in approximate increases to assets of $525 and liabilities of $600 on the Consolidated Balance Sheets. The Company does not anticipate that there will be a material impact in the Consolidated Statements of Earnings.
IFRS 17 – *Insurance Contracts*	In May 2017, the IASB issued IFRS 17, *Insurance Contracts*, which will replace IFRS 4, *Insurance Contracts* and will be applied retrospectively. If the full retrospective application is impractical, then the modified retrospective or fair value methods may be used. In November 2018, the IASB proposed an amendment to IFRS 17 providing a deferral of one year of the effective date of the standard to January 1, 2022. In addition, the IASB extended to January 1, 2022 the exemption for insurers to apply the financial instruments standard, IFRS 9 – *Financial Instruments*, so that both IFRS 9 and IFRS 17 will have the same effective date. The IASB continues to evaluate certain elements of the standard and is expected to issue narrow-scope amendments specific to these items. The adoption of IFRS 17 is a significant initiative for the Company supported by a formal governance framework and project plan, for which substantial resources are being dedicated. The Company has made progress in implementing its project plan. The Company has assembled a project team that is working on the implementation of IFRS 17 which involves preparing the financial reporting systems and processes for reporting under IFRS 17, as well as monitoring developments from the IASB, the Transition Resource Group for IFRS 17 and other industry associations.

2. Basis of Presentation and Summary of Accounting Policies (cont'd)

Standard	Summary of Future Changes
IFRS 17 – *Insurance Contracts,* continued	IFRS 17 sets out the requirements for the recognition, measurement, presentation and disclosures of insurance contracts a company issues and reinsurance contracts it holds. IFRS 17 introduces three new measurement models depending on the nature of the insurance contracts. IFRS 17 requires entities to measure insurance contract liabilities on the balance sheet as the total of: (a) the fulfilment cash flows – the current estimates of amounts that a company expects to collect from premiums and pay out for claims, benefits and expenses, including an adjustment for the timing and risk of those amounts; and (b) the contractual service margin – the future profit for providing insurance coverage. The future profit for providing insurance coverage is recognized in profit or loss over time as the insurance coverage is provided. IFRS 17 also requires the Company to distinguish between groups of contracts expected to be profit making and groups of contracts expected to be onerous. The Company is required to update the fulfilment cash flows at each reporting date, using current estimates of the amount, timing and uncertainty of cash flows and discount rates. IFRS 17 will affect how the Company accounts for its insurance contracts and how it reports financial performance in the Consolidated Statements of Earnings. The Company continues to assess the impact for IFRS 17, which is expected to be significant on the timing of earnings recognition for its insurance contracts as well as continuing to assess the impact on regulatory and tax regimes that are dependent upon IFRS accounting values. The adoption of IFRS 17 will also have a significant impact on how insurance contract results are presented and disclosed in the consolidated financial statements.
IFRS 9 – *Financial Instruments*	In July 2014, the IASB issued a final version of IFRS 9, *Financial Instruments* (IFRS 9) to replace IAS 39, *Financial Instruments: Recognition and Measurement*. The effective date for IFRS 9 has been deferred to align with the effective date for IFRS 17 of January 1, 2022. The standard provides changes to financial instruments accounting for the following: • classification and measurement of financial instruments based on a business model approach for managing financial assets and the contractual cash flow characteristics of the financial asset; • impairment based on an expected loss model; and • hedge accounting that incorporates the risk management practices of an entity. In September 2016, the IASB issued an amendment to IFRS 4, *Insurance Contracts* (IFRS 4). The amendment "Applying IFRS 9, *Financial Instruments* with IFRS 4, *Insurance Contracts*" provides qualifying insurance companies with two options to address the potential volatility associated with implementing the IFRS 9 standard before the new proposed insurance contract standard is effective. The two options are as follows: • *Deferral Approach* – provides the option to defer implementation of IFRS 9 until the year 2022 or the effective date of the new insurance contract standard, whichever is earlier; or • *Overlay Approach* – provides the option to recognize the volatility that could arise when IFRS 9 is applied within other comprehensive income, rather than profit or loss. The Company qualifies for the amendment and is applying the deferral approach to allow adoption of both IFRS 9 and IFRS 17 simultaneously. The disclosure for the measurement and classification of the Company's portfolio investments provides most of the information required by IFRS 9. The Company continues to evaluate the impact for the adoption of this standard with the adoption of IFRS 17.
Annual Improvements 2015 – 2017 Cycle	In December 2017, the IASB issued *Annual Improvements 2015 – 2017 Cycle* as part of its ongoing process to efficiently deal with non-urgent narrow scope amendments to IFRS. Four amendments were included in this issue relating to IFRS 3, *Business Combinations*, IFRS 11, *Joint Arrangements*, IAS 12, *Income Taxes* and IAS 23, *Borrowing Costs.* The amendments are effective January 1, 2019. Adoption of these amendments will not have an impact on the Company's consolidated financial statements.
IAS 28 – *Investments in Associates and Joint Ventures*	In October 2017, the IASB issued amendments to IAS 28, *Investments in Associates and Joint Ventures*. The amendments clarify that a company is to account for long-term interests in an associate or joint venture using IFRS 9, *Financial Instruments* when the equity method is not applied. The amendments are effective January 1, 2019. Adoption of these amendments will not have an impact on the Company's consolidated financial statements.
IAS 19 – *Employee Benefits*	In February 2018, the IASB issued amendments to IAS 19, *Employee Benefits.* The amendments clarify that updated actuarial assumptions are to be used in accounting for when a plan amendment, curtailment or settlement occurs. The amendments are effective January 1, 2019. Adoption of these amendments will not have an impact on the Company's consolidated financial statements.
IFRIC 23 – *Uncertainty over Income Tax Treatments*	In June 2017, the IASB issued IFRIC 23, *Uncertainty over Income Tax Treatments*. The interpretation clarifies how to apply the recognition and measurement requirements in IAS 12, *Income Taxes*, when there is uncertainty over income tax treatments. The interpretation is effective January 1, 2019. The Company is finalizing its analysis and expects an adjustment to opening accumulated surplus at January 1, 2019, which will not have a material impact on the Company's consolidated financial statements.
IFRS 3 – *Business Combinations*	In October 2018, the IASB issued amendments to IFRS 3, *Business Combinations*. The amendments provide additional guidance as to whether a company acquired a business or a group of assets. The amendments are effective January 1, 2020. The Company is evaluating the impact of the adoption of these amendments.
IAS 1 – *Presentation of Financial Statements* and IAS 8 – *Accounting Policies, Changes in Accounting Estimates and Errors*	In October 2018, the IASB issued amendments to IAS 1, *Presentation of Financial Statements* and IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*. The amendments are to clarify the definition of 'material' and to align the definition used in the Conceptual Framework and the standards themselves. The amendments are effective January 1, 2020. The Company is evaluating the impact of the adoption of these amendments.

3. Business Acquisitions

(a) Retirement Advantage

On January 2, 2018, the Company, through its indirect wholly-owned subsidiary, The Canada Life Group (UK) Ltd., completed the acquisition of 100% of the outstanding shares of MGM Advantage Holdings Ltd., which operated as Retirement Advantage. Retirement Advantage is a financial services provider based in the United Kingdom that offers retirement and equity release services and on October 1, 2018, was rebranded Canada Life. The operations of Retirement Advantage are being integrated with Canada Life as part of the United Kingdom Business Transformation (note 5).

During the third quarter of 2018, the Company completed its comprehensive evaluation of the fair value of the net assets acquired from MGM Advantage Holdings Ltd. and the purchase price allocation. As a result, initial goodwill presented in the March 31, 2018, and June 30, 2018, interim unaudited financial statements of $240 recognized upon the acquisition was adjusted. The provisional amounts reported in the interim unaudited financial statements for the recognition and measurement of intangible assets and certain other items were also adjusted.

The amounts assigned to the assets acquired, goodwill, and liabilities assumed on January 2, 2018, reported as at December 31, 2018, are as follows:

Assets acquired	
Bonds	**$ 1,748**
Reinsurance assets	**931**
Mortgage loans – equity release mortgages	**799**
Cash and cash equivalents and other assets	**261**
Intangible assets	**56**
Goodwill	**205**
Investments on account of segregated fund policyholders	**950**
Total assets acquired	**$ 4,950**
Liabilities assumed	
Insurance contract liabilities	**$ 2,572**
Funds held under reinsurance assets	**997**
Other liabilities	**32**
Investment and insurance contracts on account of segregated fund policyholders	**950**
Total liabilities assumed	**$ 4,551**

The goodwill represents the excess of the purchase price over the fair value of the net assets, representing the synergies or future economic benefits arising from other assets acquired that are not individually identified and separately recognized in the acquisition. The goodwill is not deductible for tax purposes.

As at December 31, 2018, the comprehensive valuation of the fair value of the net assets acquired, including intangible assets and completion of the purchase price allocation, was finalized. Revenue and net earnings of Retirement Advantage were not significant to the results of the Company.

(b) EverWest Real Estate Partners

On February 2, 2018, the Company, through its wholly-owned subsidiary GWL Realty Advisors U.S. Inc. completed the acquisition of EverWest Real Estate Partners, a United States real estate advisor. The acquisition was not material.

(c) Invesco Ltd. (Ireland)

On August 1, 2018, the Company, through its indirect wholly-owned subsidiary Irish Life Group Limited, completed its agreement to acquire a controlling interest in Invesco Ltd. (Ireland), an independent financial consultancy firm in Ireland that specializes in employee benefit consultancy and private wealth management who manages and administers assets on behalf of clients. This transaction increased non-controlling interests by $20, with no significant impact on revenue and net earnings. As at December 31, 2018, the purchase price allocation is incomplete, with the initial amount assigned to goodwill of $80 on the date of acquisition to be adjusted pending the completion of a comprehensive valuation during the first half of 2019.

(d) Acquisition of PanAgora Non-Controlling Interest

During the first quarter of 2018, the Company, through Putnam, acquired the non-controlling interest in PanAgora previously held by Nippon Life Insurance Company. This transaction decreased accumulated surplus and non-controlling interests by $54 and $21 respectively, with no impact on net earnings.

4. Assets Held For Sale

(a) Sale of policies to Scottish Friendly

On June 21, 2018, Canada Life Limited, an indirect wholly-owned subsidiary of the Company, announced an agreement to sell a heritage block of individual policies to Scottish Friendly of $4,216, comprised of unit-linked policies of $3,319 and non unit-linked policies of $897. The transfer of these policies is expected to occur in the second half of 2019, as part of the United Kingdom Business Transformation (note 5). The initial composition of the assets and liabilities of the disposal group classified as assets held for sale as at December 31, 2018, are as follows:

Assets	
Cash and cash equivalents	$ 112
Bonds	731
Stocks	22
Investment properties	29
Loans to policyholders	3
Assets held for sale	897
Investments on account of segregated fund policyholders	3,319
Total assets included in disposal group classified as held for sale	**$ 4,216**
Liabilities	
Insurance contract liabilities	$ 870
Investment contract liabilities	27
Liabilities held for sale	897
Investment and insurance contracts on account of segregated fund policyholders	3,319
Total liabilities included in disposal group classified as held for sale	**$ 4,216**

The composition of assets and liabilities of the disposal group will be finalized after a comprehensive evaluation of the fair value of the assets and liabilities to be transferred have been completed. Net earnings from the disposal of these policies are not expected to be material to the consolidated financial statements.

(b) Disposal of Assets Held for Sale

During the first quarter of 2018, the Company executed the final sale agreement and disposed of its assets held for sale totaling $169 at December 31, 2017. The derecognition of these assets held for sale did not have an impact on net earnings for the year ended December 31, 2018.

5. Restructuring

United Kingdom Business Transformation

In 2018, the Company recorded a restructuring provision in the European segment of $67 pre-tax ($56 after-tax) in the common shareholder's account. This restructuring is in respect of activities aimed at achieving planned expense reductions and an organizational realignment. The expense reductions will be achieved through system exit costs, reduction in staff and other costs as a result of integrating Retirement Advantage into Canada Life along with the sale of a heritage block of individual policies to Scottish Friendly.

At December 31, 2018, the Company has a restructuring provision of $61 recorded in other liabilities for this charge. The change in the restructuring provision for the United Kingdom Business Transformation is set out below:

Balance, beginning of year	$ –
Restructuring expenses	67
Amounts used	(8)
Changes in foreign exchange rates	2
Balance, end of year	**$ 61**

Canadian Business Transformation

In 2017, the Company recorded a restructuring provision for the Canadian operations transformation plan of $215 pre-tax ($172 pre-tax in the shareholder account and $43 pre-tax in the participating accounts) with the charge recorded in restructuring expenses in the Consolidated Statements of Earnings. This restructuring is in respect of activities aimed at achieving planned expense reductions and an organizational realignment to respond to changing customer needs and expectations in Canada. The expense reductions address costs across the Canadian operations and corporate functions primarily through a reduction in staff, exiting of certain lease agreements and information system impairments. The restructuring expense in the participating accounts is comprised of $29 in London Life, $7 in Great-West Life and $7 in Canada Life.

The Canadian Business Transformation is substantially completed. At December 31, 2018, the Company has a restructuring provision of $21 ($120 at December 31, 2017) remaining in other liabilities.

6. Cash and Cash Equivalents

Cash and cash equivalents include amounts held at the Lifeco holding company level and amounts held in Lifeco's consolidated subsidiary companies.

	2018	2017
Cash	$ 2,527	$ 2,029
Short-term deposits	1,641	1,522
Total	**$ 4,168**	$ 3,551

At December 31, 2018 cash of $339 was restricted for use by the Company ($244 at December 31, 2017) in respect of cash held in trust for reinsurance agreements or with regulatory authorities, cash held under certain indemnity arrangements, client monies held by brokers and cash held in escrow.

7. Portfolio Investments

(a) Carrying values and estimated fair values of portfolio investments are as follows:

	2018		2017	
	Carrying value	Fair value	Carrying value	Fair value
Bonds				
Designated fair value through profit or loss (1)	$ 90,015	$ 90,015	$ 88,062	$ 88,062
Classified fair value through profit or loss (1)	1,886	1,886	1,836	1,836
Available-for-sale	13,239	13,239	12,347	12,347
Loans and receivables	19,722	20,619	17,959	19,470
	124,862	125,759	120,204	121,715
Mortgage loans				
Residential				
Designated fair value through profit or loss (1) (3)	813	813	–	–
Loans and receivables	9,721	9,808	8,905	9,083
	10,534	10,621	8,905	9,083
Commercial	14,480	14,790	13,280	13,922
	25,014	25,411	22,185	23,005
Stocks				
Designated fair value through profit or loss (1)	8,658	8,658	8,097	8,097
Available-for-sale	11	11	55	55
Available-for-sale, at cost (2)	267	267	348	348
Equity method	354	293	364	406
	9,290	9,229	8,864	8,906
Investment properties	5,218	5,218	4,851	4,851
Total	$ 164,384	$ 165,617	$ 156,104	$ 158,477

(1) A financial asset is designated as fair value through profit or loss on initial recognition if it eliminates or significantly reduces an accounting mismatch. Changes in the fair value of financial assets designated as fair value through profit or loss are generally offset by changes in insurance contract liabilities, since the measurement of insurance contract liabilities is determined with reference to the assets supporting the liabilities.

A financial asset is classified as fair value through profit or loss on initial recognition if it is part of a portfolio that is actively traded for the purpose of earning investment income.

(2) Fair value cannot be reliably measured, therefore the investments are held at cost.

(3) Equity release mortgages acquired with the acquisition of Retirement Advantage (note 3) are designated at fair value through profit or loss.

7. Portfolio Investments (cont'd)

(b) Carrying value of bonds and mortgages by term to maturity are as follows:

	2018			
	Term to maturity			
	1 year or less	**1–5 years**	**Over 5 years**	**Total**
Bonds	**$ 11,642**	**$ 28,196**	**$ 84,822**	**$ 124,660**
Mortgage loans (1)	**969**	**7,928**	**16,093**	**24,990**
Total	**$ 12,611**	**$ 36,124**	**$ 100,915**	**$ 149,650**

(1) Mortgage loans include equity release mortgages which do not have a fixed redemption date. The maturity profile of the portfolio has therefore been estimated based on previous redemption experience.

	2017			
	Term to maturity			
	1 year or less	1–5 years	Over 5 years	Total
Bonds	$ 10,187	$ 26,926	$ 82,845	$ 119,958
Mortgage loans	1,425	6,611	14,115	22,151
Total	$ 11,612	$ 33,537	$ 96,960	$ 142,109

The above excludes the carrying value of impaired bonds and mortgage loans, as the ultimate timing of collectability is uncertain.

(c) Certain stocks where equity method earnings are computed are discussed below:

Substantially all of the Company's equity method investments relate to the Company's investment, held through Great-West Life, in an affiliated company, IGM, a member of the Power Financial group of companies, over which it exerts significant influence but does not control. The Company's proportionate share of IGM's earnings is recorded in net investment income in the Consolidated Statements of Earnings. The Company owns 9,200,548 shares of IGM at December 31, 2018 (9,202,049 at December 31, 2017) representing a 3.82% ownership interest (3.82% at December 31, 2017). The Company uses the equity method to account for its investment in IGM as it exercises significant influence. Significant influence arises from several factors, including, but not limited to the following: common control of the Company and IGM by Power Financial, shared representation on the Boards of Directors of the Company and IGM, interchange of managerial personnel, and certain shared strategic alliances, significant intercompany transactions and service agreements that influence the financial and operating policies of both companies.

	2018	2017
Carrying value, beginning of year	**$ 362**	$ 361
Equity method share of IGM net earnings	**26**	22
De-recognition of certain deferred sales commissions (note 2)	**(21)**	–
Dividends received	**(21)**	(21)
Carrying value, end of year	**$ 346**	$ 362
Share of equity, end of year	**$ 174**	$ 186
Fair value, end of year	**$ 285**	$ 404

The Company and IGM both have a year-end date of December 31. The Company's year-end results are approved and reported before IGM publicly reports its financial result; therefore, the Company reports IGM's financial information by estimating the amount of earnings attributable to the Company, based on prior quarter information as well as other market expectations, to complete equity method accounting. The difference between actual and estimated results is reflected in the subsequent quarter and is not material to the Company's consolidated financial statements.

IGM's financial information as at December 31, 2018 can be obtained in its publicly available information.

At December 31, 2018 and 2017 IGM owned 39,737,388 common shares of the Company.

(d) Included in portfolio investments are the following:

(i) Carrying amount of impaired investments

	2018	2017
Impaired amounts by classification		
Fair value through profit or loss	$ 178	$ 233
Available-for-sale	30	17
Loans and receivables	28	41
Total	$ 236	$ 291

The carrying amount of impaired investments includes $202 bonds, $24 mortgage loans and $10 stocks at December 31, 2018 ($246 bonds, $34 mortgage loans and $11 stocks at December 31, 2017). The above carrying values for loans and receivables are net of allowances of $20 at December 31, 2018 and $40 at December 31, 2017.

(ii) The allowance for credit losses and changes in the allowance for credit losses related to investments classified as loans and receivables are as follows:

	2018			2017		
	Bonds	Mortgage loans	Total	Bonds	Mortgage loans	Total
Balance, beginning of year	$ –	$ 40	$ 40	$ 7	$ 36	$ 43
Net provision for credit losses – in year	–	4	4	–	9	9
Write-offs, net of recoveries	–	(24)	(24)	(7)	(5)	(12)
Balance, end of year	$ –	$ 20	$ 20	$ –	$ 40	$ 40

The allowance for credit losses is supplemented by the provision for future credit losses included in insurance contract liabilities.

7. Portfolio Investments (cont'd)

(e) Net investment income comprises the following:

2018	Bonds	Mortgage loans	Stocks	Investment properties	Other	Total
Regular net investment income:						
Investment income earned	**$ 4,416**	**$ 916**	**$ 271**	**$ 340**	**$ 529**	**$ 6,472**
Net realized gains (losses)						
Available-for-sale	**(7)**	**–**	**3**	**–**	**–**	**(4)**
Other classifications	**15**	**81**	**–**	**–**	**21**	**117**
Net allowances for credit losses on loans and receivables	**–**	**(4)**	**–**	**–**	**–**	**(4)**
Other income (expenses)	**–**	**–**	**–**	**(95)**	**(128)**	**(223)**
	4,424	**993**	**274**	**245**	**422**	**6,358**
Changes in fair value on fair value through profit or loss assets:						
Classified fair value through profit or loss	**(13)**	**–**	**(1)**	**–**	**–**	**(14)**
Designated fair value through profit or loss	**(3,027)**	**(24)**	**(775)**	**–**	**201**	**(3,625)**
Recorded at fair value through profit or loss	**–**	**–**	**–**	**33**	**–**	**33**
	(3,040)	**(24)**	**(776)**	**33**	**201**	**(3,606)**
Total	**$ 1,384**	**$ 969**	**$ (502)**	**$ 278**	**$ 623**	**$ 2,752**

2017	Bonds	Mortgage loans	Stocks	Investment properties	Other	Total
Regular net investment income:						
Investment income earned	$ 4,294	$ 892	$ 263	$ 318	$ 463	$ 6,230
Net realized gains						
Available-for-sale	17	–	13	–	–	30
Other classifications	23	74	–	–	–	97
Net allowances for credit losses on loans and receivables	2	(9)	–	–	–	(7)
Other income (expenses)	–	–	–	(87)	(122)	(209)
	4,336	957	276	231	341	6,141
Changes in fair value on fair value through profit or loss assets:						
Classified fair value through profit or loss	(16)	–	3	–	–	(13)
Designated fair value through profit or loss	881	–	576	–	(154)	1,303
Recorded at fair value through profit or loss	–	–	–	176	–	176
	865	–	579	176	(154)	1,466
Total	$ 5,201	$ 957	$ 855	$ 407	$ 187	$ 7,607

Investment income earned comprises income from investments that are classified as available-for-sale, loans and receivables and investments classified or designated as fair value through profit or loss. Investment income from bonds and mortgages includes interest income and premium and discount amortization. Income from stocks includes dividends, distributions from private equity and equity income from the investment in IGM and Allianz Ireland, which was disposed of during 2017. Investment properties income includes rental income earned on investment properties, ground rent income earned on leased and sub-leased land, fee recoveries, lease cancellation income, and interest and other investment income earned on investment properties. Other income includes policyholder loan income, foreign exchange gains and losses, income earned from derivative financial instruments and other miscellaneous income.

(f) Transferred Financial Assets

The Company engages in securities lending to generate additional income. The Company's securities custodians are used as lending agents. Collateral, which exceeds the fair value of the loaned securities, is deposited by the borrower with the Company's lending agent and maintained by the lending agent until the underlying security has been returned. The fair value of the loaned securities is monitored on a daily basis by the lending agent who obtains or refunds additional collateral as the fair value of the loaned securities fluctuates. Included in the collateral deposited with the Company's lending agent is cash collateral of $84 as of December 31, 2018 (nil at December 31, 2017). In addition, the securities lending agent indemnifies the Company against borrower risk, meaning that the lending agent agrees contractually to replace securities not returned due to a borrower default. As at December 31, 2018, the Company had loaned securities (which are included in invested assets) with a fair value of $8,847 ($7,427 at December 31, 2017).

8. Funds Held by Ceding Insurers

At December 31, 2018, the Company had amounts on deposit of $9,251 ($9,893 at December 31, 2017) for funds held by ceding insurers on the Consolidated Balance Sheets. Income and expenses arising from the agreements are included in net investment income in the Consolidated Statements of Earnings.

The details of the funds on deposit for certain agreements where the Company has credit risk are as follows:

(a) Carrying values and estimated fair values:

	2018		2017	
	Carrying value	**Fair value**	Carrying value	Fair value
Cash and cash equivalents	**$ 230**	**$ 230**	$ 132	$ 132
Bonds	**6,925**	**6,925**	7,806	7,806
Other assets	**91**	**91**	106	106
Total	**$ 7,246**	**$ 7,246**	$ 8,044	$ 8,044
Supporting:				
Reinsurance liabilities	**$ 6,992**	**$ 6,992**	$ 7,777	$ 7,777
Surplus	**254**	**254**	267	267
Total	**$ 7,246**	**$ 7,246**	$ 8,044	$ 8,044

(b) The following provides details of the carrying value of bonds included in the funds on deposit by issuer and industry sector:

	2018	2017
Bonds issued or guaranteed by:		
Treasuries	**$ 821**	$ 918
Government related	**1,349**	1,424
Non-agency securitized	**745**	891
Financials	**1,607**	1,834
Communications	**154**	159
Consumer products	**448**	606
Energy	**206**	244
Industrials	**217**	256
Technology	**74**	74
Transportation	**168**	196
Utilities	**1,136**	1,204
Total long-term bonds	**6,925**	7,806
Total	**$ 6,925**	$ 7,806

(c) Asset quality

Bond Portfolio By Credit Rating

	2018	2017
AAA	**$ 609**	$ 714
AA	**2,858**	3,204
A	**2,698**	3,240
BBB	**667**	439
BB and lower	**93**	209
Total	**$ 6,925**	$ 7,806

9. Financial Instruments Risk Management

The Company has policies relating to the identification, measurement, management, monitoring and reporting of risks associated with financial instruments. The key risks related to financial instruments are credit risk, liquidity risk and market risk (currency, interest rate and equity). The Risk Committee of the Board of Directors is responsible for the oversight of the Company's key risks.

The following sections describe how the Company manages each of these risks.

(a) Credit Risk

Credit risk is the risk of loss resulting from an obligor's potential inability or unwillingness to fully meet its contractual obligations.

The following policies and procedures are in place to manage this risk:

- Investment policies aim to minimize undue concentration within issuers, connected companies, industries or individual geographies.
- Investment limits specify minimum and maximum limits for each asset class.
- Identification of credit risk through an internal credit risk rating system which includes a detailed assessment of an obligor's creditworthiness. Internal credit risk ratings cannot be higher than the highest rating provided by certain independent ratings companies.
- Portfolios are monitored continuously, and reviewed regularly with the Risk Committee and the Investment Committee of the Board of Directors.
- Credit risk associated with derivative instruments is evaluated quarterly based on conditions that existed at the balance sheet date, using practices that are at least as conservative as those recommended by regulators. The Company manages derivative credit risk by including derivative exposure to aggregate credit exposures measured against rating based obligor limits and through collateral arrangements where possible.
- Counterparties providing reinsurance to the Company are reviewed for financial soundness as part of an ongoing monitoring process. The minimum financial strength of reinsurers is outlined in the Reinsurance Risk Management Policy. The Company seeks to minimize reinsurance credit risk by setting rating based limits on net ceded exposure by counterparty as well as seeking protection in the form of collateral or funds withheld arrangements where possible.
- Investment guidelines also specify collateral requirements.

(i) Maximum Exposure to Credit Risk

The following summarizes the Company's maximum exposure to credit risk related to financial instruments. The maximum credit exposure is the carrying value of the asset net of any allowances for losses.

	2018	2017
Cash and cash equivalents	**$ 4,168**	$ 3,551
Bonds		
Fair value through profit or loss	**91,901**	89,898
Available-for-sale	**13,239**	12,347
Loans and receivables	**19,722**	17,959
Mortgage loans	**25,014**	22,185
Loans to policyholders	**8,929**	8,280
Funds held by ceding insurers (1)	**9,251**	9,893
Reinsurance assets	**6,126**	5,045
Interest due and accrued	**1,388**	1,334
Accounts receivable	**2,502**	2,154
Premiums in course of collection	**1,312**	1,159
Trading account assets	**843**	723
Finance leases receivable	**410**	350
Other assets (2)	**672**	554
Derivative assets	**417**	384
Total	**$ 185,894**	$ 175,816

(1) Includes $7,246 ($8,044 at December 31, 2017) of funds held by ceding insurers where the Company retains the credit risk of the assets supporting the liabilities ceded (note 8).

(2) Includes items such as current income taxes receivable and miscellaneous other assets of the Company (note 13).

Credit risk is also mitigated by entering into collateral agreements. The amount and type of collateral required depends on an assessment of the credit risk of the counterparty. Guidelines are implemented regarding the acceptability of types of collateral and the valuation parameters. Management monitors the value of the collateral, requests additional collateral when needed and performs an impairment valuation when applicable. The Company has $109 of collateral received from counterparties as at December 31, 2018 ($77 at December 31, 2017) relating to derivative assets.

(ii) Concentration of Credit Risk

Concentrations of credit risk arise from exposures to a single obligor, a group of related obligors or groups of obligors that have similar credit risk characteristics and operate in the same geographic region or in similar industries. The characteristics are similar in that changes in economic or political environments may impact their ability to meet obligations as they come due.

The following provides details of the carrying value of bonds by issuer, industry sector and operating segment:

	2018			
	Canada	**United States**	**Europe**	**Total**
Bonds issued or guaranteed by:				
Treasuries	**$ 654**	**$ 103**	**$ 12,492**	**$ 13,249**
Government related	**17,947**	**3,605**	**8,499**	**30,051**
Agency securitized	**80**	**1,531**	**14**	**1,625**
Non-agency securitized	**2,191**	**5,701**	**1,830**	**9,722**
Financials	**3,986**	**4,666**	**6,068**	**14,720**
Communications	**788**	**1,357**	**1,211**	**3,356**
Consumer products	**3,660**	**4,073**	**3,412**	**11,145**
Energy	**1,805**	**2,241**	**868**	**4,914**
Industrials	**1,606**	**3,932**	**1,757**	**7,295**
Technology	**611**	**1,105**	**470**	**2,186**
Transportation	**2,622**	**968**	**1,131**	**4,721**
Utilities	**8,525**	**4,201**	**4,686**	**17,412**
Total long-term bonds	**44,475**	**33,483**	**42,438**	**120,396**
Short-term bonds	**2,790**	**74**	**1,602**	**4,466**
Total	**$ 47,265**	**$ 33,557**	**$ 44,040**	**$ 124,862**

	2017			
	Canada	United States	Europe	Total
Bonds issued or guaranteed by:				
Treasuries	$ 899	$ 263	$ 12,452	$ 13,614
Government related	19,322	3,570	7,557	30,449
Agency securitized	65	1,937	21	2,023
Non-agency securitized	2,073	5,232	1,761	9,066
Financials	3,872	4,070	5,493	13,435
Communications	782	1,304	1,015	3,101
Consumer products	3,159	3,714	3,238	10,111
Energy	1,806	2,041	866	4,713
Industrials	1,544	3,727	1,748	7,019
Technology	591	1,094	485	2,170
Transportation	2,407	828	1,144	4,379
Utilities	7,310	4,332	4,277	15,919
Total long-term bonds	43,830	32,112	40,057	115,999
Short-term bonds	2,474	78	1,653	4,205
Total	$ 46,304	$ 32,190	$ 41,710	$ 120,204

9. Financial Instruments Risk Management (cont'd)

The following provides details of the carrying value of mortgage loans by operating segment:

	2018			
	Canada	United States	Europe	Total
Single family residential	$ 2,104	$ –	$ –	$ 2,104
Multi-family residential	4,686	2,434	497	7,617
Equity release	26	–	787	813
Commercial	7,223	4,006	3,251	14,480
Total	**$ 14,039**	**$ 6,440**	**$ 4,535**	**$ 25,014**

	2017			
	Canada	United States	Europe	Total
Single family residential	$ 2,139	$ –	$ –	$ 2,139
Multi-family residential	4,163	2,190	413	6,766
Commercial	6,840	3,257	3,183	13,280
Total	$ 13,142	$ 5,447	$ 3,596	$ 22,185

(iii) Asset Quality

Bond Portfolio By Credit Rating

	2018	2017
AAA	$ 23,558	$ 24,889
AA	33,793	32,405
A	41,008	40,328
BBB	25,553	21,449
BB and lower	950	1,133
Total	**$ 124,862**	$ 120,204

Derivative Portfolio By Credit Rating

	2018	2017
Over-the-counter contracts (counterparty ratings):		
AA	$ 252	$ 135
A	110	235
BBB	47	13
Exchange-traded	8	1
Total	**$ 417**	$ 384

(iv) Loans Past Due, But Not Impaired

Loans that are past due but not considered impaired are loans for which scheduled payments have not been received, but management has reasonable assurance of collection of the full amount of principal and interest due. The following provides carrying values of the loans past due, but not impaired:

	2018	2017
Less than 30 days	$ 1	$ 1
30 – 90 days	2	–
Greater than 90 days	–	1
Total	**$ 3**	$ 2

(v) The following outlines the future asset credit losses provided for in insurance contract liabilities. These amounts are in addition to the allowance for asset losses included with assets:

	2018	2017
Participating	$ 885	$ 1,254
Non-participating	1,710	1,637
Total	**$ 2,595**	$ 2,891

(b) Liquidity Risk

Liquidity risk is the risk that the Company will not be able to meet all cash outflow obligations as they come due. The following policies and procedures are in place to manage this risk:

- The Company closely manages operating liquidity through cash flow matching of assets and liabilities and forecasting earned and required yields, to ensure consistency between policyholder requirements and the yield of assets. Approximately 66% (approximately 67% in 2017) of insurance and investment contract liabilities are non-cashable prior to maturity or subject to fair value adjustments.
- Management closely monitors the solvency and capital positions of its principal subsidiaries opposite liquidity requirements at the holding company. Additional liquidity is available through established lines of credit or via capital market transactions. The Company maintains $350 of liquidity at the Lifeco level through committed lines of credit with Canadian chartered banks. As well, the Company maintains a $150 liquidity facility at Great-West Life, a U.S. $500 revolving credit agreement with a syndicate of banks for use by Putnam, and a U.S. $50 line of credit at Great-West Financial.

In the normal course of business the Company enters into contracts that give rise to commitments of future minimum payments that impact short-term and long-term liquidity. The following summarizes the principal repayment schedule of certain of the Company's financial liabilities.

	Payments due by period						
	Total	1 year	2 years	3 years	4 years	5 years	Over 5 years
Debentures and other debt instruments	$ 5,879	$ –	$ 500	$ –	$ –	$ 779	$ 4,600
Capital trust securities (1)	150	–	–	–	–	–	150
Purchase obligations	237	90	91	37	17	2	–
Pension contributions	295	295	–	–	–	–	–
Total	**$ 6,561**	**$ 385**	**$ 591**	**$ 37**	**$ 17**	**$ 781**	**$ 4,750**

(1) Payments due have not been reduced to reflect that the Company held capital trust securities of $37 principal amount ($51 carrying value).

(c) Market Risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate as a result of changes in market factors which include three types: currency risk, interest rate (including related inflation) risk and equity risk.

Caution Related to Risk Sensitivities

These consolidated financial statements include estimates of sensitivities and risk exposure measures for certain risks, such as the sensitivity due to specific changes in interest rate levels projected and market prices as at the valuation date. Actual results can differ significantly from these estimates for a variety of reasons including:

- Assessment of the circumstances that led to the scenario may lead to changes in (re)investment approaches and interest rate scenarios considered,
- Changes in actuarial, investment return and future investment activity assumptions,
- Actual experience differing from the assumptions,
- Changes in business mix, effective income tax rates and other market factors,
- Interactions among these factors and assumptions when more than one changes, and
- The general limitations of the Company's internal models.

For these reasons, the sensitivities should only be viewed as directional estimates of the underlying sensitivities for the respective factors based on the assumptions outlined above. Given the nature of these calculations, the Company cannot provide assurance that the actual impact on net earnings attributed to shareholders will be as indicated.

(i) Currency Risk

Currency risk relates to the Company operating and holding financial instruments in different currencies. For the assets backing insurance and investment contract liabilities that are not matched by currency, changes in foreign exchange rates can expose the Company to the risk of foreign exchange losses not offset by liability decreases. The Company has net investments in foreign operations. The Company's debt obligations are denominated in Canadian dollars, euros, and U.S. dollars. In accordance with IFRS, foreign currency translation gains and losses from net investments in foreign operations, net of related hedging activities and tax effects, are recorded in accumulated other comprehensive income. Strengthening or weakening of the Canadian dollar spot rate compared to the U.S. dollar, British pound and euro spot rates impacts the Company's total equity. Correspondingly, the Company's book value per share and capital ratios monitored by rating agencies are also impacted.

The following policies and procedures are in place to mitigate the Company's exposure to currency risk:

- The Company uses financial measures such as constant currency calculations to monitor the effect of currency translation fluctuations.
- Investments are normally made in the same currency as the liabilities supported by those investments. Segmented Investment Guidelines include maximum tolerances for unhedged currency mismatch exposures.
- For assets backing liabilities not matched by currency, the Company would normally convert the assets back to the currency of the liability using foreign exchange contracts.
- A 10% weakening of the Canadian dollar against foreign currencies would be expected to increase non-participating insurance and investment contract liabilities and their supporting assets by approximately the same amount resulting in an immaterial change to net earnings. A 10% strengthening of the Canadian dollar against foreign currencies would be expected to decrease non-participating insurance and investment contract liabilities and their supporting assets by approximately the same amount resulting in an immaterial change in net earnings.

(ii) Interest Rate Risk

Interest rate risk exists if asset and liability cash flows are not closely matched and interest rates change causing a difference in value between the asset and liability. The following policies and procedures are in place to mitigate the Company's exposure to interest rate risk:

- The Company utilizes a formal process for managing the matching of assets and liabilities. This involves grouping general fund assets and liabilities into segments. Assets in each segment are managed in relation to the liabilities in the segment.
- Interest rate risk is managed by investing in assets that are suitable for the products sold.
- Where these products have benefit or expense payments that are dependent on inflation (inflation-indexed annuities, pensions and disability claims) the Company generally invests in real return instruments to hedge its real dollar liability cash flows. Some protection against changes in the inflation index is achieved as any related change in the fair value of the assets will be largely offset by a similar change in the fair value of the liabilities.
- For products with fixed and highly predictable benefit payments, investments are made in fixed income assets or real estate whose cash flows closely match the liability product cash flows. Where assets are not available to match certain period cash flows, such as long-tail cash flows, a portion of these are invested in equities and the rest are duration matched. Hedging instruments are employed where necessary when there is a lack of suitable permanent investments to minimize loss exposure to interest rate changes. To the extent these cash flows are matched, protection against interest rate change is achieved and any change in the fair value of the assets will be offset by a similar change in the fair value of the liabilities.
- For products with less predictable timing of benefit payments, investments are made in fixed income assets with cash flows of a shorter duration than the anticipated timing of benefit payments, or equities as described below.
- The risk associated with the mismatch in portfolio duration and cash flow, asset prepayment exposure and the pace of asset acquisition are quantified and reviewed regularly.

Projected cash flows from the current assets and liabilities are used in the Canadian Asset Liability Method to determine insurance contract liabilities. Valuation assumptions have been made regarding rates of returns on supporting assets, fixed income, equity and inflation. The valuation assumptions use best estimates of future reinvestment rates and inflation assumptions with an assumed correlation together with margins for adverse deviation set in accordance with professional standards. These margins are necessary to provide for possibilities of misestimation and/or future deterioration in the best estimate assumptions and provide reasonable assurance that insurance contract liabilities cover a range of possible outcomes. Margins are reviewed periodically for continued appropriateness.

Projected cash flows from fixed income assets used in actuarial calculations are reduced to provide for potential asset default losses. The net effective yield rate reduction averaged 0.10% in 2018 (0.13% in 2017). The calculation for future credit losses on assets is based on the credit quality of the underlying asset portfolio.

Testing under a number of interest rate scenarios (including increasing, decreasing and fluctuating rates) is done to assess reinvestment risk. The total provision for interest rates is sufficient to cover a broader or more severe set of risks than the minimum arising from the current Canadian Institute of Actuaries prescribed scenarios.

The range of interest rates covered by these provisions is set in consideration of long-term historical results and is monitored quarterly with a full review annually. An immediate 1% parallel shift in the yield curve would not have a material impact on the Company's view of the range of interest rates to be covered by the provisions. If sustained however, the parallel shift could impact the Company's range of scenarios covered.

The total provision for interest rates also considers the impact of the Canadian Institute of Actuaries prescribed scenarios:

- At December 31, 2018 and December 31, 2017, the effect of an immediate 1% parallel increase in the yield curve on the prescribed scenarios results in interest rate changes to assets and liabilities that will offset each other with no impact to net earnings.
- At December 31, 2018 and December 31, 2017, the effect of an immediate 1% parallel decrease in the yield curve on the prescribed scenarios results in interest rate changes to assets and liabilities that will offset each other with no impact to net earnings.

Another way of measuring the interest rate risk associated with this assumption is to determine the effect on the insurance and investment contract liabilities impacting the shareholders' net earnings of the Company of a 1% change in the Company's view of the range of interest rates to be covered by these provisions. The following provides information on the effect of an immediate 1% increase or 1% decrease in the interest rates at both the low and high end of the range of interest rates recognized in the provisions:

	2018		2017	
	1% increase	**1% decrease**	1% increase	1% decrease
Change in interest rates				
Increase (decrease) in non-participating insurance and investment contract liabilities	**$ (165)**	**$ 639**	$ (215)	$ 720
Increase (decrease) in net earnings	**$ 115**	**$ (465)**	$ 150	$ (523)

(iii) Equity Risk

Equity risk is the uncertainty associated with the valuation of assets and liabilities arising from changes in equity markets and other pricing risk. To mitigate pricing risk, the Company has investment policy guidelines in place that provide for prudent investment in equity markets within clearly defined limits. The risks associated with segregated fund guarantees have been mitigated through a hedging program for lifetime Guaranteed Minimum Withdrawal Benefit guarantees using equity futures, currency forwards, and interest rate derivatives. For policies with segregated fund guarantees, the Company generally determines insurance contract liabilities at a conditional tail expectation of 75 (CTE75) level.

Some insurance and investment contract liabilities are supported by investment properties, common stocks and private equities, for example segregated fund products and products with long-tail cash flows. Generally these liabilities will fluctuate in line with equity values. However, there may be additional market and liability impacts as a result of changes in the equity values that will cause the liabilities to fluctuate differently than the equity values. The following provides information on the expected impacts of a 10% increase or 10% decrease in equity values:

	2018		2017	
	10% increase	**10% decrease**	10% increase	10% decrease
Change in equity values				
Increase (decrease) in non-participating insurance and investment contract liabilities	**$ (87)**	**$ 338**	$ (58)	$ 109
Increase (decrease) in net earnings	**$ 73**	**$ (266)**	$ 48	$ (85)

The best estimate return assumptions for equities are primarily based on long-term historical averages. Changes in the current market could result in changes to these assumptions and will impact both asset and liability cash flows. The following provides information on the expected impacts of a 1% increase or 1% decrease in the best estimate assumptions:

	2018		2017	
	1% increase	**1% decrease**	1% increase	1% decrease
Change in best estimate return assumptions for equities				
Increase (decrease) in non-participating insurance contract liabilities	**$ (591)**	**$ 680**	$ (542)	$ 591
Increase (decrease) in net earnings	**$ 476**	**$ (539)**	$ 439	$ (470)

9. Financial Instruments Risk Management (cont'd)

(d) Enforceable Master Netting Arrangements or Similar Agreements

The Company enters into International Swaps and Derivative Association's (ISDA's) master agreements for transacting over-the-counter derivatives. The Company receives and pledges collateral according to the related ISDA's Credit Support Annexes. The ISDA's master agreements do not meet the criteria for offsetting on the Consolidated Balance Sheets because they create a right of set-off that is enforceable only in the event of default, insolvency, or bankruptcy.

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 within this disclosure as it would become part of a pooled settlement process.

The Company's reverse repurchase agreements are also subject to right of set-off in the event of default. These transactions and agreements include master netting arrangements which provide for the netting of payment obligations between the Company and its counterparties in the event of default.

The table sets out the potential effect on the Company's Consolidated Balance Sheets on financial instruments that have been shown in a gross position where right of set-off exists under certain circumstances that do not qualify for netting on the Consolidated Balance Sheets.

	2018			
		Related amounts not set-off in the Balance Sheet		
	Gross amount of financial instruments presented in the Balance Sheet	Offsetting counterparty position (1)	Financial collateral received/ pledged (2)	Net exposure
Financial instruments – assets				
Derivative financial instruments	$ 417	$ (276)	$ (101)	$ 40
Reverse repurchase agreements (3)	15	–	(15)	–
Total financial instruments – assets	$ 432	$ (276)	$ (116)	$ 40
Financial instruments – liabilities				
Derivative financial instruments	$ 1,562	$ (276)	$ (599)	$ 687
Total financial instruments – liabilities	$ 1,562	$ (276)	$ (599)	$ 687

	2017			
		Related amounts not set-off in the Balance Sheet		
	Gross amount of financial instruments presented in the Balance Sheet	Offsetting counterparty position (1)	Financial collateral received/ pledged (2)	Net exposure
Financial instruments – assets				
Derivative financial instruments	$ 384	$ (331)	$ (26)	$ 27
Reverse repurchase agreements (3)	29	–	(29)	–
Total financial instruments – assets	$ 413	$ (331)	$ (55)	$ 27
Financial instruments – liabilities				
Derivative financial instruments	$ 1,336	$ (331)	$ (359)	$ 646
Total financial instruments – liabilities	$ 1,336	$ (331)	$ (359)	$ 646

(1) Includes counterparty amounts recognized on the Consolidated Balance Sheets where the Company has a potential offsetting position (as described above) but does not meet the criteria for offsetting on the balance sheet, excluding collateral.

(2) Financial collateral presented above excludes overcollateralization and, for exchange-traded derivatives, initial margin. Financial collateral received on reverse repurchase agreements is held by a third party. Total financial collateral, including initial margin and overcollateralization, received on derivative assets was $113 ($77 at December 31, 2017), received on reverse repurchase agreements was $15 ($29 at December 31, 2017), and pledged on derivative liabilities was $691 ($437 at December 31, 2017).

(3) Assets related to reverse repurchase agreements are included in bonds, on the Consolidated Balance Sheets.

10. Fair Value Measurement

The Company's assets and liabilities recorded at fair value have been categorized based upon the following fair value hierarchy:

Level 1: Fair value measurements utilize observable, quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access. Assets and liabilities utilizing Level 1 inputs include actively exchange-traded equity securities, exchange-traded futures, and mutual and segregated funds which have available prices in an active market with no redemption restrictions.

Level 2: Fair value measurements utilize inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs include quoted prices for similar assets and liabilities in active markets, and inputs other than quoted prices that are observable for the asset or liability, such as interest rates and yield curves that are observable at commonly quoted intervals. The fair values for some Level 2 securities were obtained from a pricing service. The pricing service inputs include, but are not limited to, benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, offers and reference data. Level 2 assets and liabilities include those priced using a matrix which is based on credit quality and average life, government and agency securities, restricted stock, some private bonds and equities, most investment-grade and high-yield corporate bonds, most asset-backed securities, most over-the-counter derivatives, and mortgage loans. Investment contracts that are measured at fair value through profit or loss are mostly included in the Level 2 category.

Level 3: Fair value measurements utilize one or more significant inputs that are not based on observable market inputs and include situations where there is little, if any, market activity for the asset or liability. The values of the majority of Level 3 securities were obtained from single broker quotes, internal pricing models, or external appraisers. Assets and liabilities utilizing Level 3 inputs generally include certain bonds, certain asset-backed securities, some private equities, investments in mutual and segregated funds where there are redemption restrictions, certain over-the-counter derivatives, investment properties and equity release mortgages.

The following presents the Company's assets and liabilities measured at fair value on a recurring basis by hierarchy level:

	2018			
	Level 1	Level 2	Level 3	Total
Assets measured at fair value				
Cash and cash equivalents	$ 4,168	$ –	$ –	$ 4,168
Financial assets at fair value through profit or loss				
Bonds	–	91,834	67	91,901
Mortgage loans	–	–	813	813
Stocks	8,254	–	404	8,658
Total financial assets at fair value through profit or loss	8,254	91,834	1,284	101,372
Available-for-sale financial assets				
Bonds	–	13,239	–	13,239
Stocks	9	–	2	11
Total available-for-sale financial assets	9	13,239	2	13,250
Investment properties	–	–	5,218	5,218
Funds held by ceding insurers	230	6,925	–	7,155
Derivatives (1)	8	409	–	417
Assets held for sale	134	731	29	894
Other assets:				
Trading account assets	597	246	–	843
Other (2)	–	84	–	84
Total assets measured at fair value	$ 13,400	$ 113,468	$ 6,533	$ 133,401
Liabilities measured at fair value				
Derivatives (3)	$ 2	$ 1,560	$ –	$ 1,562
Investment contract liabilities	–	1,711	–	1,711
Investment contract liabilities held for sale	–	1	26	27
Other liabilities	–	84	–	84
Total liabilities measured at fair value	$ 2	$ 3,356	$ 26	$ 3,384

(1) Excludes collateral received from counterparties of $109.

(2) Includes collateral received under securities lending arrangements.

(3) Excludes collateral pledged to counterparties of $612.

There were no transfers of the Company's assets and liabilities between Level 1 and Level 2 in the year.

10. Fair Value Measurement (cont'd)

	2017			
	Level 1	Level 2	Level 3	Total
Assets measured at fair value				
Cash and cash equivalents	$ 3,551	$ –	$ –	$ 3,551
Financial assets at fair value through profit or loss				
Bonds	–	89,833	65	89,898
Stocks	7,854	–	243	8,097
Total financial assets at fair value through profit or loss	7,854	89,833	308	97,995
Available-for-sale financial assets				
Bonds	–	12,347	–	12,347
Stocks	49	5	1	55
Total available-for-sale financial assets	49	12,352	1	12,402
Investment properties	–	–	4,851	4,851
Funds held by ceding insurers	132	7,806	–	7,938
Derivatives (1)	1	383	–	384
Assets held for sale	–	169	–	169
Other assets:				
Trading account assets	503	220	–	723
Total assets measured at fair value	$ 12,090	$ 110,763	$ 5,160	$ 128,013
Liabilities measured at fair value				
Derivatives (2)	$ 2	$ 1,334	$ –	$ 1,336
Investment contract liabilities	–	1,819	22	1,841
Total liabilities measured at fair value	$ 2	$ 3,153	$ 22	$ 3,177

(1) Excludes collateral received from counterparties of $77.

(2) Excludes collateral pledged to counterparties of $374.

There were no transfers of the Company's assets and liabilities between Level 1 and Level 2 in the year.

The following presents additional information about assets and liabilities measured at fair value on a recurring basis which the Company classifies as Level 3 in the fair value hierarchy:

	2018									
	Fair value through profit or loss bonds	Fair value through profit or loss mortgage loans	Fair value through profit or loss stocks (3)	Available for-sale stocks	Investment properties	Assets held for sale	Total Level 3 assets	Investment contract liabilities	Liabilities held for sale	Total Level 3 liabilities
Balance, beginning of year	$ 65	$ –	$ 243	$ 1	$ 4,851	$ –	$ 5,160	$ 22	$ –	$ 22
Total gains (losses)										
Included in net earnings	–	(24)	20	–	33	–	29	–	–	–
Included in other comprehensive income (1)	2	20	–	–	70	–	92	–	–	–
Business acquisition (note 3)	–	799	–	–	–	–	799	–	–	–
Purchases	–	–	203	1	356	–	560	–	–	–
Issues	–	76	–	–	–	–	76	–	–	–
Sales	–	–	(62)	–	(63)	–	(125)	–	–	–
Settlements	–	(58)	–	–	–	–	(58)	–	–	–
Other	–	–	–	–	–	–	–	4	–	4
Transfers into Level 3 (2)	–	–	–	–	–	–	–	–	–	–
Transfers out of Level 3 (2)	–	–	–	–	–	–	–	–	–	–
Transferred to held for sale	–	–	–	–	(29)	29	–	(26)	26	–
Balance, end of year	$ 67	$ 813	$ 404	$ 2	$ 5,218	$ 29	$ 6,533	$ –	$ 26	$ 26
Total gains (losses) for the year included in net investment income	$ –	$ (24)	$ 20	$ –	$ 33	$ –	$ 29	$ –	$ –	$ –
Change in unrealized gains (losses) for the year included in earnings for assets held at December 31, 2018	$ –	$ (24)	$ 19	$ –	$ 26	$ –	$ 21	$ –	$ –	$ –

(1) Amount of other comprehensive income for fair value through profit or loss mortgage loans and investment properties represents the unrealized gains (losses) on foreign exchange.

(2) Transfers into Level 3 are due primarily to decreased observability of inputs in valuation methodologies. Transfers out of Level 3 are due primarily to increased observability of inputs in valuation methodologies as evidenced by corroboration of market prices with multiple pricing vendors or the lifting of redemption restrictions on investments in mutual and segregated funds.

(3) Includes investments in mutual and segregated funds where there are redemption restrictions. The fair value is based on observable, quoted prices.

10. Fair Value Measurement (cont'd)

	2017							
	Fair value through profit or loss bonds	Available-for-sale bonds	Fair value through profit or loss stocks (3)	Available-for-sale stocks	Investment properties	Other assets – trading account (4)	Total Level 3 assets	Investment contract liabilities
Balance, beginning of year	$ 1	$ –	$ 80	$ 1	$ 4,340	$ 1	$ 4,423	$ 20
Total gains (losses)								
Included in net earnings	1	–	10	–	176	–	187	–
Included in other comprehensive income (1)	4	–	(3)	–	68	–	69	–
Purchases	–	–	166	–	339	–	505	–
Sales	–	–	(14)	–	(72)	(1)	(87)	–
Other	–	–	–	–	–	–	–	2
Transfers into Level 3 (2)	60	–	4	–	–	–	64	–
Transfers out of Level 3 (2)	(1)	–	–	–	–	–	(1)	–
Balance, end of year	$ 65	$ –	$ 243	$ 1	$ 4,851	$ –	$ 5,160	$ 22
Total gains for the year included in net investment income	$ 1	$ –	$ 10	$ –	$ 176	$ –	$ 187	$ –
Change in unrealized gains for the year included in earnings for assets held at December 31, 2017	$ 1	$ –	$ 10	$ –	$ 151	$ –	$ 162	$ –

(1) Amount of other comprehensive income for investment properties represents the unrealized gains (losses) on foreign exchange.

(2) Transfers into Level 3 are due primarily to decreased observability of inputs in valuation methodologies. Transfers out of Level 3 are due primarily to increased observability of inputs in valuation methodologies as evidenced by corroboration of market prices with multiple pricing vendors or the lifting of redemption restrictions on investments in mutual and segregated funds.

(3) Includes investments in mutual and segregated funds where there are redemption restrictions. The fair value is based on observable, quoted prices.

(4) Includes illiquid equities where prices are not quoted; however, the Company does not believe changing the inputs to reasonably alternate assumptions would change the values significantly.

The following sets out information about significant unobservable inputs used at year-end in measuring assets and liabilities categorized as Level 3 in the fair value hierarchy:

Type of asset	Valuation approach	Significant unobservable input	Input value	Inter-relationship between key unobservable inputs and fair value measurement
Investment properties	Investment property valuations are generally determined using property valuation models based on expected capitalization rates and models that discount expected future net cash flows. The determination of the fair value of investment property requires the use of estimates such as future cash flows (such as future leasing assumptions, rental rates, capital and operating expenditures) and discount, reversionary and overall capitalization rates applicable to the asset based on current market rates.	Discount rate Reversionary rate Vacancy rate	Range of 2.4% – 10.3% Range of 4.0% – 6.8% Weighted average of 2.2%	A decrease in the discount rate would result in an increase in fair value. An increase in the discount rate would result in a decrease in fair value. A decrease in the reversionary rate would result in an increase in fair value. An increase in the reversionary rate would result in a decrease in fair value. A decrease in the expected vacancy rate would generally result in an increase in fair value. An increase in the expected vacancy rate would generally result in a decrease in fair value.
Mortgage loans (fair value through profit or loss)	The valuation approach for equity release mortgages is to use an internal valuation model to determine the projected asset cash flows, including the stochastically calculated cost of the no negative-equity guarantee for each individual loan, to aggregate these across all loans and to discount those cash flows back to the valuation date. The projection is done monthly until expected redemption of the loan either voluntarily or on the death/entering into long term care of the loanholders.	Discount rate	4.5%	A decrease in the discount rate would result in an increase in fair value. An increase in the discount rate would result in a decrease in fair value.

The following presents the Company's assets and liabilities disclosed at fair value on a recurring basis by hierarchy level:

	2018				
	Level 1	Level 2	Level 3	Other assets/ liabilities not held at fair value	Total
Assets disclosed at fair value					
Loans and receivables financial assets					
Bonds	$ –	$ 20,524	$ 95	$ –	$ 20,619
Mortgage loans	–	24,598	–	–	24,598
Loans to policyholders	–	8,929	–	–	8,929
Total loans and receivables financial assets	–	54,051	95	–	54,146
Available-for-sale financial assets					
Stocks (1)	–	–	–	267	267
Other stocks (2)	285	–	–	8	293
Assets held for sale	–	3	–	–	3
Funds held by ceding insurers	–	–	–	91	91
Total assets disclosed at fair value	$ 285	$ 54,054	$ 95	$ 366	$ 54,800
Liabilities disclosed at fair value					
Debentures and other debt instruments	$ 475	$ 6,450	$ –	$ –	$ 6,925
Total liabilities disclosed at fair value	$ 475	$ 6,450	$ –	$ –	$ 6,925

(1) Fair value of certain stocks available for sale cannot be reliably measured, therefore, these investments are recorded at cost.

(2) Other stocks include the Company's investments in an affiliated company, IGM, a member of the Power Financial group of companies.

	2017				
	Level 1	Level 2	Level 3	Other assets/ liabilities not held at fair value	Total
Assets disclosed at fair value					
Loans and receivables financial assets					
Bonds	$ –	$ 19,365	$ 105	$ –	$ 19,470
Mortgage loans	–	23,005	–	–	23,005
Loans to policyholders	–	8,280	–	–	8,280
Total loans and receivables financial assets	–	50,650	105	–	50,755
Available-for-sale financial assets					
Stocks (1)	–	–	–	348	348
Other stocks (2) (3)	404	–	–	2	406
Funds held by ceding insurers	–	–	–	106	106
Total assets disclosed at fair value	$ 404	$ 50,650	$ 105	$ 456	$ 51,615
Liabilities disclosed at fair value					
Debentures and other debt instruments	$ 428	$ 5,843	$ –	$ –	$ 6,271
Total liabilities disclosed at fair value	$ 428	$ 5,843	$ –	$ –	$ 6,271

(1) Fair value of certain stocks available for sale cannot be reliably measured, therefore, these investments are recorded at cost.

(2) Other stocks include the Company's investments in an affiliated company, IGM, a member of the Power Financial group of companies.

(3) During 2017, the Company classified an investment within a disposal group of assets held for sale, which was disposed of in 2018 (note 4).

11. Goodwill and Intangible Assets

(a) Goodwill

(i) The carrying value of goodwill and changes in the carrying value of goodwill are as follows:

	2018	2017
Balance, beginning of year	**$ 6,179**	$ 5,977
Business acquisitions	**331**	182
Changes in foreign exchange rates	**38**	20
Balance, end of year	**$ 6,548**	$ 6,179

Accumulated goodwill impairment losses and changes in accumulated goodwill impairment losses are as follows:

	2018	2017
Balance, beginning of year	**$ 1,133**	$ 1,205
Changes in foreign exchange rates	**90**	(72)
Balance, end of year	**$ 1,223**	$ 1,133

(ii) Within each of the three operating segments, goodwill has been assigned to cash generating unit groupings, representing the lowest level in which goodwill is monitored for internal reporting purposes. Lifeco does not allocate insignificant amounts of goodwill and indefinite life intangible assets across multiple cash generating unit groupings. Goodwill is tested for impairment by comparing the carrying value of each cash generating unit grouping to which goodwill has been assigned to its recoverable amount as follows:

	2018	2017
Canada		
Group Customer	**$ 1,470**	$ 1,443
Individual Customer	**2,545**	2,526
Europe		
Insurance and Annuities	**2,325**	2,015
Reinsurance (1)	**–**	1
United States		
Financial Services	**208**	194
Total	**$ 6,548**	$ 6,179

(1) During 2018, the Reinsurance cash generating unit grouping goodwill of $1 was impaired.

(b) Intangible Assets

Intangible assets of $3,976 ($3,732 as at December 31, 2017) include indefinite life and finite life intangible assets. The carrying value and changes in the carrying value of these intangible assets are as follows:

(i) Indefinite life intangible assets:

	2018			
	Brands and trademarks	**Customer contract related**	**Shareholders' portion of acquired future participating account profit**	**Total**
Cost				
Balance, beginning of year	**$ 964**	**$ 2,495**	**$ 354**	**$ 3,813**
Changes in foreign exchange rates	**42**	**170**	**–**	**212**
Balance, end of year	**$ 1,006**	**$ 2,665**	**$ 354**	**$ 4,025**
Accumulated impairment				
Balance, beginning of year	**$ (132)**	**$ (1,019)**	**$ –**	**$ (1,151)**
Changes in foreign exchange rates	**(8)**	**(82)**	**–**	**(90)**
Balance, end of year	**$ (140)**	**$ (1,101)**	**$ –**	**$ (1,241)**
Net carrying amount	**$ 866**	**$ 1,564**	**$ 354**	**$ 2,784**

	2017			
	Brands and trademarks	Customer contract related	Shareholders' portion of acquired future participating account profit	Total
Cost				
Balance, beginning of year	$ 979	$ 2,938	$ 354	$ 4,271
Transfer to assets held for sale (note 4)	–	(290)	–	(290)
Changes in foreign exchange rates	(15)	(153)	–	(168)
Balance, end of year	$ 964	$ 2,495	$ 354	$ 3,813
Accumulated impairment				
Balance, beginning of year	$ (157)	$ (1,084)	$ –	$ (1,241)
Impairment reversal (1)	20	–	–	20
Changes in foreign exchange rates	5	65	–	70
Balance, end of year	$ (132)	$ (1,019)	$ –	$ (1,151)
Net carrying amount	$ 832	$ 1,476	$ 354	$ 2,662

(1) During 2017, the Company reversed an impairment loss of $20 initially recorded in 2008 related to certain Putnam brands and trademarks. The reversal has been recorded in the Consolidated Statements of Earnings within amortization of finite life intangible assets and impairment reversal.

(ii) Indefinite life intangible assets have been assigned to the cash generating unit groupings as follows:

	2018	2017
Canada		
Group Customer	**$ 354**	$ 354
Individual Customer	**619**	619
Europe		
Insurance and Annuities	**233**	227
United States		
Asset Management	**1,578**	1,462
Total	**$ 2,784**	$ 2,662

11. Goodwill and Intangible Assets (cont'd)

(iii) Finite life intangible assets:

	2018			
	Customer contract related	**Distribution channels**	**Technology/ Software**	**Total**
Amortization period range	**7 – 30 years**	**30 years**	**3 – 10 years**	
Amortization method	**Straight-line**	**Straight-line**	**Straight-line**	
Cost				
Balance, beginning of year	**$ 975**	**$ 108**	**$ 1,390**	**$ 2,473**
Additions	**34**	**–**	**270**	**304**
Changes in foreign exchange rates	**38**	**3**	**70**	**111**
Disposals	**–**	**–**	**(13)**	**(13)**
Balance, end of year	**$ 1,047**	**$ 111**	**$ 1,717**	**$ 2,875**
Accumulated amortization and impairment				
Balance, beginning of year	**$ (505)**	**$ (52)**	**$ (846)**	**$ (1,403)**
Changes in foreign exchange rates	**(24)**	**(1)**	**(49)**	**(74)**
Disposals	**–**	**–**	**6**	**6**
Amortization	**(57)**	**(4)**	**(151)**	**(212)**
Balance, end of year	**$ (586)**	**$ (57)**	**$ (1,040)**	**$ (1,683)**
Net carrying amount	**$ 461**	**$ 54**	**$ 677**	**$ 1,192**

	2017			
	Customer contract related	Distribution channels	Technology/ Software	Total
Amortization period range	9 – 30 years	30 years	3 – 10 years	
Amortization method	Straight-line	Straight-line	Straight-line	
Cost				
Balance, beginning of year	$ 831	$ 106	$ 1,264	$ 2,201
Additions	154	–	187	341
Changes in foreign exchange rates	(10)	2	(36)	(44)
Disposals	–	–	(25)	(25)
Balance, end of year	$ 975	$ 108	$ 1,390	$ 2,473
Accumulated amortization and impairment				
Balance, beginning of year	$ (460)	$ (48)	$ (751)	$ (1,259)
Changes in foreign exchange rates	8	–	28	36
Disposals	–	–	8	8
Amortization	(53)	(4)	(131)	(188)
Balance, end of year	$ (505)	$ (52)	$ (846)	$ (1,403)
Net carrying amount	$ 470	$ 56	$ 544	$ 1,070

During 2017, the Company recognized an impairment loss of $16 on software assets included in the provision for the Canadian Business Transformation (note 5).

The weighted average remaining amortization period of the customer contract related and distribution channels are 13 and 15 years respectively (14 and 16 years respectively at December 31, 2017).

(c) Recoverable Amount

For the purposes of annual impairment testing, the Company allocates goodwill and indefinite life intangible assets to cash generating unit groupings. Any potential impairment of goodwill or indefinite life intangible assets is identified by comparing the recoverable amount of a cash generating unit grouping to its carrying value. Recoverable amount is based on fair value less cost of disposal.

Fair value is initially assessed with reference to valuation multiples of comparable publicly-traded financial institutions and precedent business acquisitions transactions. These valuation multiples may include price-to-earnings or price-to-book measures for life insurers and asset managers. This assessment may give regard to a variety of relevant considerations, including expected growth, risk and capital market conditions, among other factors. The valuation multiples used in assessing fair value represent Level 2 inputs.

In the fourth quarter of 2018, the Company conducted its annual impairment testing of goodwill and indefinite life intangible assets based on September 30, 2018 asset balances. It was determined that the recoverable amounts of cash generating unit groupings were in excess of their carrying values and there was no evidence of significant impairment.

Any reasonable changes in assumptions and estimates used in determining recoverable amounts of cash generating unit groupings is unlikely to cause carrying values to exceed recoverable amounts.

12. Owner Occupied Properties and Fixed Assets

The carrying value of owner occupied properties and the changes in the carrying value of owner occupied properties is as follows:

	2018	2017
Carrying value, beginning of year	$ 789	$ 721
Less: accumulated depreciation/impairments	(83)	(72)
Net carrying value, beginning of year	706	649
Additions	28	73
Impairments	(9)	–
Depreciation	(12)	(11)
Foreign exchange	18	(5)
Net carrying value, end of year	$ 731	$ 706

The net carrying value of fixed assets is $448 at December 31, 2018 ($303 at December 31, 2017).

The following provides details of the net carrying value of owner occupied properties and fixed assets by operating segment:

	2018	2017
Canada	$ 612	$ 547
United States	357	265
Europe	210	197
Total	$ 1,179	$ 1,009

There are no restrictions on the title of the owner occupied properties and fixed assets, nor are they pledged as security for debt.

13. Other Assets

	2018	2017
Deferred acquisition costs	$ **597**	$ 633
Trading account assets [(1)]	**843**	723
Finance leases receivable	**410**	350
Defined benefit pension plan assets (note 24)	**148**	193
Prepaid expenses	**115**	105
Miscellaneous other assets	**454**	420
Total	$ **2,567**	$ 2,424

(1) Includes bonds of $215 and stocks of $628 at December 31, 2018 (bonds of $114 and stocks of $609 at December 31, 2017).

Total other assets of $1,441 ($1,275 at December 31, 2017) are expected to be realized within 12 months from the reporting date. This amount excludes deferred acquisition costs, the changes in which are noted below.

Deferred acquisition costs	2018	2017
Balance, beginning of year	$ **633**	$ 597
Change in accounting policy (note 2)	**(59)**	–
Revised balance, beginning of year	**574**	597
Additions	**86**	139
Amortization	**(46)**	(86)
Changes in foreign exchange rates	**18**	24
Disposals	**(35)**	(41)
Balance, end of year	$ **597**	$ 633

Finance leases receivable

The Company has a finance lease on one property in Canada which has been leased for a 25-year term. The Company has five finance leases on properties in Europe. These properties have been leased for terms ranging between 27 and 40 years.

The finance lease receivable for the six properties, in aggregate, is as follows:

	2018	
	Minimum lease payments	Present value of minimum lease payments
One year	$ 29	$ 28
Over one to five years	120	97
Over five years	733	285
	882	410
Less: unearned finance lease income	472	–
Total finance leases receivable	$ **410**	$ **410**

The internal rate of return for the leases ranges between 3.9% and 7.6%.

14. Insurance and Investment Contract Liabilities

(a) Insurance and investment contract liabilities

	2018		
	Gross liability	**Reinsurance assets**	**Net**
Insurance contract liabilities	**$ 166,720**	**$ 6,126**	**$ 160,594**
Investment contract liabilities	**1,711**	**–**	**1,711**
Total	**$ 168,431**	**$ 6,126**	**$ 162,305**

	2017		
	Gross liability	Reinsurance assets	Net
Insurance contract liabilities	$ 159,524	$ 5,045	$ 154,479
Investment contract liabilities	1,841	–	1,841
Total	$ 161,365	$ 5,045	$ 156,320

(b) Composition of insurance and investment contract liabilities and related supporting assets

(i) The composition of insurance and investment contract liabilities is as follows:

	2018		
	Gross liability	**Reinsurance assets**	**Net**
Participating			
Canada	**$ 38,078**	**$ (351)**	**$ 38,429**
United States	**11,871**	**14**	**11,857**
Europe	**978**	**–**	**978**
Non-Participating			
Canada	**30,174**	**500**	**29,674**
United States	**31,042**	**271**	**30,771**
Europe	**56,288**	**5,692**	**50,596**
Total	**$ 168,431**	**$ 6,126**	**$ 162,305**

	2017		
	Gross liability	Reinsurance assets	Net
Participating			
Canada	$ 36,430	$ (356)	$ 36,786
United States	11,155	15	11,140
Europe	1,286	–	1,286
Non-Participating			
Canada	30,031	475	29,556
United States	28,814	272	28,542
Europe	53,649	4,639	49,010
Total	$ 161,365	$ 5,045	$ 156,320

14. Insurance and Investment Contract Liabilities (cont'd)

(ii) The composition of the assets supporting liabilities and equity is as follows:

	2018					
	Bonds	**Mortgage loans**	**Stocks**	**Investment properties**	**Other**	**Total**
Carrying value						
Participating liabilities						
Canada	**$ 18,044**	**$ 9,145**	**$ 5,397**	**$ 1,908**	**$ 3,584**	**$ 38,078**
United States	**5,140**	**749**	**–**	**–**	**5,982**	**11,871**
Europe	**708**	**24**	**68**	**18**	**160**	**978**
Non-participating liabilities						
Canada	**19,204**	**3,845**	**1,916**	**196**	**5,013**	**30,174**
United States	**25,324**	**4,993**	**–**	**–**	**725**	**31,042**
Europe	**35,174**	**4,511**	**191**	**2,795**	**13,617**	**56,288**
Other	**15,504**	**1,038**	**940**	**99**	**214,279**	**231,860**
Total equity	**5,764**	**709**	**778**	**202**	**19,945**	**27,398**
Total carrying value	**$ 124,862**	**$ 25,014**	**$ 9,290**	**$ 5,218**	**$ 263,305**	**$ 427,689**
Fair value	**$ 125,759**	**$ 25,411**	**$ 9,229**	**$ 5,218**	**$ 263,305**	**$ 428,922**

	2017					
	Bonds	Mortgage loans	Stocks	Investment properties	Other	Total
Carrying value						
Participating liabilities						
Canada	$ 17,262	$ 8,485	$ 5,032	$ 1,641	$ 4,010	$ 36,430
United States	5,220	447	–	–	5,488	11,155
Europe	928	27	110	48	173	1,286
Non-participating liabilities						
Canada	19,486	3,777	2,027	134	4,607	30,031
United States	23,400	4,268	–	–	1,146	28,814
Europe	33,037	3,569	262	2,810	13,971	53,649
Other	15,165	943	881	72	215,876	232,937
Total equity	5,706	669	552	146	18,463	25,536
Total carrying value	$ 120,204	$ 22,185	$ 8,864	$ 4,851	$ 263,734	$ 419,838
Fair value	$ 121,715	$ 23,005	$ 8,906	$ 4,851	$ 263,734	$ 422,211

Cash flows of assets supporting insurance and investment contract liabilities are matched within reasonable limits. Changes in the fair values of these assets are essentially offset by changes in the fair value of insurance and investment contract liabilities.

Changes in the fair values of assets backing capital and surplus, less related income taxes, would result in a corresponding change in surplus over time in accordance with investment accounting policies.

(c) Change in insurance contract liabilities

The change in insurance contract liabilities during the year was the result of the following business activities and changes in actuarial estimates:

	2018		
	Participating		
	Gross liability	Reinsurance assets	Net
Balance, beginning of year	**$ 48,856**	**$ (341)**	**$ 49,197**
Impact of new business	**24**	**–**	**24**
Normal change in force	**1,413**	**7**	**1,406**
Management action and changes in assumptions	**(29)**	**(5)**	**(24)**
Transfer of liabilities to held for sale (note 4)	**(281)**	**–**	**(281)**
Impact of foreign exchange rate changes	**945**	**2**	**943**
Balance, end of year	**$ 50,928**	**$ (337)**	**$ 51,265**

	Non-participating			
	Gross liability	Reinsurance assets	Net	Total Net
Balance, beginning of year	**$ 110,668**	**$ 5,386**	**$ 105,282**	**$ 154,479**
Impact of new business	**6,680**	**169**	**6,511**	**6,535**
Normal change in force	**(6,553)**	**(243)**	**(6,310)**	**(4,904)**
Management action and changes in assumptions	**(700)**	**25**	**(725)**	**(749)**
Business movement from/to external parties	**(134)**	**(2)**	**(132)**	**(132)**
Retirement Advantage acquisition (note 3)	**2,572**	**931**	**1,641**	**1,641**
Transfer of liabilities to held for sale (note 4)	**(589)**	**–**	**(589)**	**(870)**
Impact of foreign exchange rate changes	**3,848**	**197**	**3,651**	**4,594**
Balance, end of year	**$ 115,792**	**$ 6,463**	**$ 109,329**	**$ 160,594**

	2017		
	Participating		
	Gross liability	Reinsurance assets	Net
Balance, beginning of year	$ 47,176	$ (429)	$ 47,605
Impact of new business	(15)	–	(15)
Normal change in force	2,442	(2)	2,444
Management action and changes in assumptions	61	92	(31)
With Profits Fund conversion	(74)	–	(74)
Impact of foreign exchange rate changes	(734)	(2)	(732)
Balance, end of year	$ 48,856	$ (341)	$ 49,197

	Non-participating			
	Gross liability	Reinsurance assets	Net	Total Net
Balance, beginning of year	$ 108,764	$ 6,056	$ 102,708	$ 150,313
Impact of new business	6,550	210	6,340	6,325
Normal change in force	(2,737)	(162)	(2,575)	(131)
Management action and changes in assumptions	(1,222)	(971)	(251)	(282)
With Profits Fund conversion	74	–	74	–
Business movement from/to external parties	(344)	–	(344)	(344)
Impact of foreign exchange rate changes	(417)	253	(670)	(1,402)
Balance, end of year	$ 110,668	$ 5,386	$ 105,282	$ 154,479

14. Insurance and Investment Contract Liabilities (cont'd)

Under fair value accounting, movement in the fair value of the supporting assets is a major factor in the movement of insurance contract liabilities. Changes in the fair value of assets are largely offset by corresponding changes in the fair value of liabilities. The change in the value of the insurance contract liabilities associated with the change in the value of the supporting assets is included in the normal change in force above.

In 2018, the major contributors to the increase in net insurance contract liabilities were the impact of new business of $6,535, the acquisition of Retirement Advantage of $1,641 and the net impact of foreign exchange rate changes of $4,594. This was partially offset by decrease due to normal change in force of $4,904, the expected transfer of UK heritage business to Scottish Friendly of $870 and management action and changes in assumptions of $749.

Net non-participating insurance contract liabilities decreased by $725 in 2018 due to management actions and assumption changes including a $562 decrease in Europe and Reinsurance, a $107 decrease in Canada and a $56 decrease in the United States.

The decrease in Canada was primarily due to updated economic assumptions of $197, updated provision for claims of $19 and updated provision for experience rating refunds of $10, partially offset by increases due to updated morbidity assumptions of $62, updated policyholder behaviour assumptions of $46 and updated life mortality assumptions of $10.

The decrease in Europe was primarily due to updated longevity assumptions of $372, updated life mortality assumptions of $129, modeling refinements of $41, updated economic assumptions of $39, updated morbidity assumptions of $25, and updated expense and tax assumptions of $21, partially offset by increases due to updated policyholder behaviour assumptions of $65.

The decrease in the United States was primarily due to updated policyholder behavior assumptions of $63, updated life mortality assumptions of $16 and updated longevity assumptions of $15, partially offset by increases due to modeling refinements of $21 and updated economic assumptions of $13.

Net participating insurance contract liabilities decreased by $24 in 2018 due to management actions and assumption changes. The decrease was primarily due to modeling refinements of $229, expense and tax assumptions of $133 and updated mortality assumptions of $5, partially offset by increases due to updated provisions for future policyholder dividends of $232, lower investment returns of $101 and updated policyholder behaviour assumptions of $8.

In 2017, the major contributor to the increase in net insurance contract liabilities was the impact of new business of $6,325. This was partially offset by decreases due to the impact of foreign exchange rate changes of $1,402 primarily due to the lower U.S. dollar, business movement from/to external parties of $344 and management action and changes in assumptions of $282.

Net non-participating insurance contract liabilities decreased by $251 in 2017 due to management actions and assumption changes including a $61 decrease in Canada, a $200 decrease in Europe and a $10 increase in the United States.

The decrease in Canada was primarily due to updated life mortality assumptions of $148, updated morbidity assumptions of $49, updated economic assumptions of $41 and modeling refinements of $5, partially offset by increases due to updated policyholder behaviour assumptions of $113, updated longevity assumptions of $59, updated provision for experience rated funds of $8 and updated provision for claims of $6.

The decrease in Europe was primarily due to updated longevity assumptions of $296 and updated economic assumptions of $180, partially offset by increases due to updated life mortality assumptions of $128, updated expense and tax assumptions of $41, updated policyholder behaviour assumptions of $61, modeling refinements of $32, updated provisions for claims of $7 and updated provisions of $5.

The increase in the United States was primarily due to updated expense and tax assumptions of $62, partially offset by updated life mortality assumptions of $44 and modeling refinements of $5.

Net participating insurance contract liabilities decreased by $31 in 2017 due to management actions and assumption changes. The decrease was primarily due to updated provisions for future policyholder dividends of $4,409 and expense and tax assumptions of $500, partially offset by increases due to lower investment returns of $4,257, updated mortality assumptions of $289, modeling refinements of $243 and updated policyholder behaviour assumptions of $89.

(d) Change in investment contract liabilities measured at fair value

	2018	2017
Balance, beginning of year	**$ 1,841**	$ 2,009
Normal change in force business	**(190)**	(171)
Investment experience	**(26)**	93
Management action and changes in assumptions	**15**	(22)
Transfer of liabilities to held for sale (note 4)	**(27)**	–
Impact of foreign exchange rate changes	**98**	(68)
Balance, end of year	**$ 1,711**	$ 1,841

The carrying value of investment contract liabilities approximates their fair value. No investment contract liabilities have been reinsured.

(e) Gross premiums written and gross policyholder benefits

(i) Premium Income

	2018	2017
		(note 2)
Direct premiums	**$ 26,083**	$ 25,154
Assumed reinsurance premiums	**13,901**	13,107
Total	**$ 39,984**	$ 38,261

(ii) Policyholder Benefits

	2018	2017
Direct	**$ 17,830**	$ 16,947
Assumed reinsurance	**14,527**	13,854
Total	**$ 32,357**	$ 30,801

(f) Actuarial Assumptions

In the computation of insurance contract liabilities, valuation assumptions have been made regarding rates of mortality/morbidity, investment returns, levels of operating expenses, rates of policy termination and rates of utilization of elective policy options or provisions. The valuation assumptions use best estimates of future experience together with a margin for adverse deviation. These margins are necessary to provide for possibilities of misestimation and/or future deterioration in the best estimate assumptions and provide reasonable assurance that insurance contract liabilities cover a range of possible outcomes. Margins are reviewed periodically for continued appropriateness.

The methods for arriving at these valuation assumptions are outlined below:

Mortality

A life insurance mortality study is carried out annually for each major block of insurance business. The results of each study are used to update the Company's experience valuation mortality tables for that business. When there is insufficient data, use is made of the latest industry experience to derive an appropriate valuation mortality assumption. Improvement scales for life insurance and annuitant mortality are updated periodically based on population and industry studies, product specific considerations, as well as professional guidance. In addition, appropriate provisions have been made for future mortality deterioration on term insurance.

Annuitant mortality is also studied regularly and the results used to modify established industry experience annuitant mortality tables.

Morbidity

The Company uses industry developed experience tables modified to reflect emerging Company experience. Both claim incidence and termination are monitored regularly and emerging experience is factored into the current valuation.

Property and casualty reinsurance

Insurance contract liabilities for property and casualty reinsurance written by London Reinsurance Group (LRG), a subsidiary of London Life, are determined using accepted actuarial practices for property and casualty insurers in Canada. The insurance contract liabilities have been established using cash flow valuation techniques including discounting. The insurance contract liabilities are based on cession statements provided by ceding companies. In addition, insurance contract liabilities also include an amount for incurred but not reported losses which may differ significantly from the ultimate loss development. The estimates and underlying methodology are continually reviewed and updated, and adjustments to estimates are reflected in earnings. LRG analyzes the emergence of claims experience against expected assumptions for each reinsurance contract separately and at the portfolio level. If necessary, a more in-depth analysis is undertaken of the cedant experience.

Investment returns

The assets which correspond to the different liability categories are segmented. For each segment, projected cash flows from the current assets and liabilities are used in the Canadian Asset Liability Method to determine insurance contract liabilities. Cash flows from assets are reduced to provide for asset default losses. Testing under several interest rate and equity scenarios (including increasing and decreasing rates) is done to provide for reinvestment risk (note 9(c)).

Expenses

Contractual policy expenses (e.g. sales commissions) and tax expenses are reflected on a best estimate basis. Expense studies for indirect operating expenses are updated regularly to determine an appropriate estimate of future operating expenses for the liability type being valued. Improvements in unit operating expenses are not projected. An inflation assumption is incorporated in the estimate of future operating expenses consistent with the interest rate scenarios projected under the Canadian Asset Liability Method as inflation is assumed to be correlated with new money interest rates.

Policy termination

Studies to determine rates of policy termination are updated regularly to form the basis of this estimate. Industry data is also available and is useful where the Company has no experience with specific types of policies or its exposure is limited. The Company's most significant exposures are in respect of the T-100 and Level Cost of Insurance Universal Life products in Canada and policy renewal rates at the end of term for renewable term policies in Canada and Reinsurance. Industry experience has guided the Company's assumptions for these products as the Company's own experience is very limited.

Utilization of elective policy options

There are a wide range of elective options embedded in the policies issued by the Company. Examples include term renewals, conversion to whole life insurance (term insurance), settlement annuity purchase at guaranteed rates (deposit annuities) and guarantee re-sets (segregated fund maturity guarantees). The assumed rates of utilization are based on Company or industry experience when it exists and when not on judgment considering incentives to utilize the option. Generally, whenever it is clearly in the best interests of an informed policyholder to utilize an option, then it is assumed to be elected.

Policyholder dividends and adjustable policy features

Future policyholder dividends and other adjustable policy features are included in the determination of insurance contract liabilities with the assumption that policyholder dividends or adjustable benefits will change in the future in response to the relevant experience. The dividend and policy adjustments are determined consistent with policyholders' reasonable expectations, such expectations being influenced by the participating policyholder dividend policies and/or policyholder communications, marketing material and past practice. It is the Company's expectation that changes will occur in policyholder dividend scales or adjustable benefits for participating or adjustable business respectively, corresponding to changes in the best estimate assumptions, resulting in an immaterial net change in insurance contract liabilities. Where underlying guarantees may limit the ability to pass all of this experience back to the policyholder, the impact of this non-adjustability on shareholders' earnings is reflected in the changes in best estimate assumptions above.

(g) Risk Management

(i) Insurance risk

Insurance risk is the risk that the insured event occurs and that there are large deviations between expected and actual actuarial assumptions including mortality, persistency, longevity, morbidity, expense variations and investment returns.

The Company is in the business of accepting risk associated with insurance contract liabilities. The objective of the Company is to mitigate its exposure to risk arising from these contracts through product design, product and geographical diversification, the implementation of the Company's underwriting strategy guidelines, and through the use of reinsurance arrangements.

The following provides information about the Company's insurance contract liabilities sensitivities to management's best estimate of the approximate impact as a result of changes in assumptions used to determine the Company's liability associated with these contracts.

	Increase (decrease) in net earnings	
	2018	2017
Mortality – 2% increase	**$ (270)**	$ (296)
Annuitant mortality – 2% decrease	**$ (457)**	$ (446)
Morbidity – 5% adverse change	**$ (271)**	$ (256)
Investment returns		
Parallel shift in yield curve		
1% increase	**$ –**	$ –
1% decrease	**$ –**	$ –
Change in interest rates		
1% increase	**$ 115**	$ 150
1% decrease	**$ (465)**	$ (523)
Change in equity values		
10% increase	**$ 73**	$ 48
10% decrease	**$ (266)**	$ (85)
Change in best estimate return assumptions for equities		
1% increase	**$ 476**	$ 439
1% decrease	**$ (539)**	$ (470)
Expenses – 5% increase	**$ (128)**	$ (127)
Policy termination and renewal – 10% adverse change	**$ (649)**	$ (672)

Concentration risk may arise from geographic regions, accumulation of risks and market risk. The concentration of insurance risk before and after reinsurance by geographic region is described below.

	2018			2017		
	Gross liability	**Reinsurance assets**	**Net**	Gross liability	Reinsurance assets	Net
Canada	**$ 68,252**	**$ 149**	**$ 68,103**	$ 66,461	$ 119	$ 66,342
United States	**42,913**	**285**	**42,628**	39,969	287	39,682
Europe	**57,266**	**5,692**	**51,574**	54,935	4,639	50,296
Total	**$ 168,431**	**$ 6,126**	**$ 162,305**	$ 161,365	$ 5,045	$ 156,320

(ii) Reinsurance risk

Maximum limits per insured life benefit amount (which vary by line of business) are established for life and health insurance, and reinsurance is purchased for amounts in excess of those limits.

Reinsurance costs and recoveries as defined by the reinsurance agreement are reflected in the valuation with these costs and recoveries being appropriately calibrated to the direct assumptions.

Reinsurance contracts do not relieve the Company from its obligations to policyholders. Failure of reinsurers to honour their obligations could result in losses to the Company. The Company evaluates the financial condition of its reinsurers to minimize its exposure to significant losses from reinsurer insolvencies.

Certain of the reinsurance contracts are on a funds withheld basis where the Company retains the assets supporting the reinsured insurance contract liabilities, thus minimizing the exposure to significant losses from reinsurer insolvency on those contracts.

15. Segregated Funds and Other Structured Entities

The Company offers segregated fund products in Canada, the U.S. and Europe that are referred to as segregated funds, separate accounts and unit-linked funds in the respective region. These funds are contracts issued by insurers to segregated fund policyholders where the benefit is directly linked to the performance of the investments, the risks or rewards of the fair value movements and net investment income is realized by the segregated fund policyholders. The segregated fund policyholders are required to select the segregated funds that hold a range of underlying investments. While the Company has legal title to the investments, there is a contractual obligation to pass along the investment results to the segregated fund policyholder and the Company segregates these investments from those of the Company.

In Canada and the U.S., the segregated fund and separate account assets are legally separated from the general assets of the Company under the terms of the policyholder agreement and cannot be used to settle obligations of the Company. In Europe, the assets of the funds are functionally and constructively segregated from those of the Company. As a result of the legal and constructive arrangements of these funds, the assets and liabilities of these funds are presented as line items within the Consolidated Balance Sheets titled investments on account of segregated fund policyholders and with an equal liability titled investment and insurance contracts on account of segregated fund policyholders.

In circumstances where the segregated funds are invested in structured entities and are deemed to control the entity, the Company has presented the non-controlling ownership interest within the segregated funds for the risk of policyholders as equal and offsetting amounts in the assets and liabilities. The amounts presented within are $864 at December 31, 2018 ($1,602 at December 31, 2017).

Within the Consolidated Statements of Earnings, all segregated fund policyholders' income, including fair value changes and net investment income, is credited to the segregated fund policyholders and reflected in the assets and liabilities on account of segregated fund policyholders within the Consolidated Balance Sheets. As these amounts do not directly impact the revenues and expenses of the Company, these amounts are not included separately in the Consolidated Statements of Earnings.

Segregated Funds Guarantee Exposure

The Company offers retail segregated fund products, unitized with profits (UWP) products and variable annuity products that provide for certain guarantees that are tied to the market values of the investment funds. While these products are similar to mutual funds, there is a key difference from mutual funds as the segregated funds have certain guarantee features that protect the segregated fund policyholder from market declines in the underlying investments. These guarantees are the Company's primary exposure on these funds. The Company accounts for these guarantees within insurance and investment contract liabilities within the consolidated financial statements. In addition to the Company's exposure on the guarantees, the fees earned by the Company on these products are impacted by the market value of these funds.

In Canada, the Company offers retail segregated fund products through Great-West Life, London Life and Canada Life. These products provide guaranteed minimum death benefits (GMDB) and guaranteed minimum accumulation on maturity benefits.

In the U.S., the Company offers variable annuities with GMDB through Great-West Financial. For the standalone GMDB business, most are a return of premium on death with the guarantee expiring at age 70. Great-West Financial in the U.S. also offers a guaranteed minimum withdrawal benefits (GMWB) product with an optional GMDB feature that does not expire with age.

In Europe, the Company offers UWP products through Canada Life and unit-linked products with investment guarantees through Irish Life. These products are similar to segregated fund products, but include pooling of policyholders' funds and minimum credited interest rates.

The Company also offers a GMWB product in Canada, the U.S., and Germany, and previously offered GMWB product in Ireland. Certain GMWB products offered by the Company offer levels of death and maturity guarantees. At December 31, 2018, the amount of GMWB product in-force in Canada, the U.S., Ireland and Germany was $4,169 ($4,225 at December 31, 2017).

The following presents further details of the investments, determined in accordance with the relevant statutory reporting requirements of each region of the Company's operations, on account of segregated fund policyholders:

(a) Investments on account of segregated fund policyholders

	2018	2017
Cash and cash equivalents	**$ 13,458**	$ 13,300
Bonds	**42,142**	42,270
Mortgage loans	**2,746**	2,610
Stocks and units in unit trusts	**89,853**	93,465
Mutual funds	**50,956**	54,658
Investment properties	**12,319**	11,520
	211,474	217,823
Accrued income	**380**	373
Other liabilities	**(3,191)**	(2,441)
Non-controlling mutual funds interest	**864**	1,602
Total	**$ 209,527**	$ 217,357

(b) Investment and insurance contracts on account of segregated fund policyholders

	2018	2017
Balance, beginning of year	**$ 217,357**	$ 200,403
Additions (deductions):		
Policyholder deposits	**24,475**	24,885
Net investment income	**3,611**	2,704
Net realized capital gains on investments	**4,876**	5,298
Net unrealized capital gains (losses) on investments	**(16,757)**	5,361
Unrealized gains due to changes in foreign exchange rates	**5,472**	2,523
Policyholder withdrawals	**(26,271)**	(23,834)
Business acquisition (1)	**950**	–
Change in Segregated Fund investment in General Fund	**69**	(42)
Change in General Fund investment in Segregated Fund	**(219)**	(17)
Net transfer from General Fund	**21**	21
Non-controlling mutual funds interest	**(738)**	55
Assets held for sale (note 4)	**(3,319)**	–
Total	**(7,830)**	16,954
Balance, end of year	**$ 209,527**	$ 217,357

(1) Investment and insurance contracts on account of segregated fund policyholders acquired through the acquisition of Retirement Advantage (note 3).

(c) Investment income on account of segregated fund policyholders

	2018	2017
Net investment income	**$ 3,611**	$ 2,704
Net realized capital gains on investments	**4,876**	5,298
Net unrealized capital gains (losses) on investments	**(16,757)**	5,361
Unrealized gains due to changes in foreign exchange rates	**5,472**	2,523
Total	**(2,798)**	15,886
Change in investment and insurance contracts liability on account of segregated fund policyholders	**(2,798)**	15,886
Net	**$ –**	$ –

15. Segregated Funds and Other Structured Entities (cont'd)

(d) Investments on account of segregated fund policyholders by fair value hierarchy level (note 10)

	2018			
	Level 1	**Level 2**	**Level 3**	**Total**
Investments on account of segregated fund policyholders [1]	**$ 131,603**	**$ 67,199**	**$ 13,235**	**$ 212,037**
Investments on account of segregated fund policyholders held for sale [2]	**3,297**	**5**	**9**	**3,311**
Total investments on account of segregated fund policyholders measured at fair value	**$ 134,900**	**$ 67,204**	**$ 13,244**	**$ 215,348**

(1) Excludes other liabilities, net of other assets, of $2,510.

(2) Excludes other assets, net of other liabilities, of $8.

	2017			
	Level 1	Level 2	Level 3	Total
Investments on account of segregated fund policyholders [1]	$ 136,469	$ 70,034	$ 12,572	$ 219,075

(1) Excludes other liabilities, net of other assets, of $1,718.

During 2018, certain foreign stock holdings valued at $1,842 have been transferred from Level 2 to Level 1 ($629 were transferred from Level 1 to Level 2 at December 31, 2017) primarily based on the Company's change in use of inputs in addition to quoted prices in active markets for certain foreign stock holdings at year end. Level 2 assets include those assets where fair value is not available from normal market pricing sources, where inputs are utilized in addition to quoted prices in active markets and where the Company does not have visibility through to the underlying assets.

As at December 31, 2018, $7,770 ($8,521 at December 31, 2017) of the segregated funds were invested in funds managed by related parties IG Wealth Management (formerly Investors Group) and Mackenzie Investments, members of the Power Financial group of companies (note 26).

The following presents additional information about the Company's investments on account of segregated fund policyholders for which the Company has utilized Level 3 inputs to determine fair value:

	2018			2017
	Investments on account of segregated fund policyholders	**Investments on account of segregated fund policyholders held for sale**	**Total**	Total
Balance, beginning of year	**$ 12,572**	**$ –**	**$ 12,572**	$ 12,045
Total gains included in segregated fund investment income	**404**	**–**	**404**	422
Purchases	**651**	**–**	**651**	926
Sales	**(425)**	**–**	**(425)**	(943)
Transfers into Level 3	**51**	**–**	**51**	137
Transfers out of Level 3	**(9)**	**–**	**(9)**	(15)
Transferred to assets held for sale	**(9)**	**9**	**–**	–
Balance, end of year	**$ 13,235**	**$ 9**	**$ 13,244**	$ 12,572

Transfers into Level 3 are due primarily to decreased observability of inputs in valuation methodologies. Transfers out of Level 3 are due primarily to increased observability of inputs in valuation methodologies as evidenced by corroboration of market prices with multiple pricing vendors.

In addition to the segregated funds, the Company has interests in a number of structured unconsolidated entities including mutual funds, open-ended investment companies, and unit trusts. These entities are created as investment strategies for its unit-holders based on the directive of each individual fund.

Some of these funds are managed by related parties of the Company and the Company receives management fees related to these services. Management fees can be variable due to performance of factors – such as markets or industries – in which the fund invests. Fee income derived in connection with the management of investment funds generally increases or decreases in direct relationship with changes of assets under management which is affected by prevailing market conditions, and the inflow and outflow of client assets.

Factors that could cause assets under management and fees to decrease include declines in equity markets, changes in fixed income markets, changes in interest rates and defaults, redemptions and other withdrawals, political and other economic risks, changing investment trends and relative investment performance. The risk is that fees may vary but expenses and recovery of initial expenses are relatively fixed, and market conditions may cause a shift in asset mix potentially resulting in a change in revenue.

During 2018, fee and other income earned by the Company resulting from the Company's interests in these structured entities was $4,786 ($4,557 during 2017).

Included within other assets (note 13) at December 31, 2018 is $733 ($632 at December 31, 2017) of investments by the Company in bonds and stocks of Putnam sponsored funds and $110 ($91 at December 31, 2017) of investments in stocks of sponsored unit trusts in Europe.

16. Debentures and Other Debt Instruments

	2018		2017	
	Carrying value	**Fair value**	Carrying value	Fair value
Short-term				
Commercial paper and other short-term debt instruments with interest rates from 2.511% to 2.693% (1.455% to 1.726% at December 31, 2017), unsecured	**$ 135**	**$ 135**	$ 126	$ 126
Revolving credit facility with interest equal to LIBOR plus 0.70% (U.S. $250; U.S. $240 at December 31, 2017), unsecured	**340**	**340**	302	302
Total short-term	**475**	**475**	428	428
Capital:				
Current				
Lifeco				
6.14% Debentures due March 21, 2018, unsecured, redeemed during the year	–	–	200	202
Long-term				
Lifeco				
6.74% Debentures due November 24, 2031, unsecured	**194**	**261**	193	270
6.67% Debentures due March 21, 2033, unsecured	**393**	**522**	393	542
5.998% Debentures due November 16, 2039, unsecured	**342**	**442**	342	460
4.65% Debentures due August 13, 2020, unsecured	**500**	**516**	499	529
3.337% Debentures due February 28, 2028, unsecured	**497**	**502**	–	–
2.50% Debentures due April 18, 2023, unsecured, (500 euro)	**778**	**837**	752	830
1.75% Debentures due December 7, 2026, unsecured, (500 euro)	**774**	**781**	749	786
	3,478	**3,861**	2,928	3,417
Canada Life				
6.40% subordinated debentures due December 11, 2028, unsecured	**100**	**126**	100	128
Canada Life Capital Trust (CLCT)				
7.529% due June 30, 2052, unsecured, face value $150	**159**	**209**	160	221
Great-West Life & Annuity Insurance Capital, LP				
6.625% Deferrable debentures due November 15, 2034, unsecured (U.S. $175)	**235**	**266**	218	269
Great-West Life & Annuity Insurance Capital, LP II				
Subordinated debentures due May 16, 2046, bearing an interest rate of 2.538% plus the 3-month LIBOR rate, unsecured (U.S. $300), with an interest rate swap to pay fixed interest of 4.68%, redeemed June 18, 2018	–	–	378	376
Great-West Lifeco Finance 2018 LP				
Senior notes due May 17, 2028, unsecured (U.S. $300), bearing an interest rate of 4.047%	**405**	**415**	–	–
Senior notes due May 17, 2048, unsecured (U.S. $500), bearing an interest rate of 4.581%	**673**	**685**	–	–
	1,078	**1,100**	–	–
Great-West Lifeco Finance (Delaware) LP				
Senior notes due June 3, 2047, unsecured (U.S. $700), bearing an interest rate of 4.15%	**934**	**888**	865	720
Great-West Lifeco Finance (Delaware) LP II				
Subordinated debentures due June 26, 2068 bearing an interest rate of 7.127% until first call par date of June 26, 2018 and, thereafter, at a rate equal to the Canadian 90-day Bankers' Acceptance rate plus 3.78%, unsecured, redeemed during the year	–	–	500	510
Total long-term	**5,984**	**6,450**	5,349	5,843
Total	**$ 6,459**	**$ 6,925**	$ 5,777	$ 6,271

On February 28, 2018, the Company issued $500 principal amount 3.337% debentures at par, maturing on February 28, 2028. Interest on the debentures is payable semi-annually in arrears on February 28 and August 28, commencing August 28, 2018 until the date on which the debentures are repaid. The debentures are redeemable at any time prior to November 28, 2027 in whole or in part at the greater of the Canada Yield Price and par, and on or after November 28, 2027 in whole or in part at par, together in each case with accrued and unpaid interest.

On March 21, 2018, the Company's 6.14% $200 debenture notes matured and were repaid at their principal amount together with accrued interest.

On May 17, 2018, Great-West Lifeco Finance 2018, LP issued $384 (U.S. $300) aggregate principal amount 4.047% senior notes due May 17, 2028 and $640 (U.S. $500) aggregate principal amount 4.581% senior notes due May 17, 2048. The tranches of senior notes are fully and unconditionally guaranteed by Lifeco.

On June 18, 2018, Great-West Life & Annuity Insurance Capital, LPII redeemed all $399 (U.S. $300) aggregate principal amount 2.538% plus 3-month LIBOR unsecured subordinated debentures due May 16, 2046. The interest payments on this debt were hedged using an interest rate swap designated as a cash flow hedge. The interest rate hedge was terminated prior to the redemption of the underlying debentures. On redemption of the underlying debentures, pre-tax gains of $65 on the interest rate hedge were recognized within financing charges (note 17) and income tax expense of $14 within the U.S. segment of the Consolidated Statements of Earnings.

16. Debentures and Other Debt Instruments (cont'd)

On June 26, 2018, Great-West Lifeco Finance (Delaware) LPII redeemed all $500 aggregate principal amount 7.127% until first par call date of June 26, 2018 and, thereafter, at a rate of equal to the Canadian Bankers' Acceptance rate plus 3.78%, unsecured subordinated debentures due June 26, 2048. The repayment of the debenture was hedged using a cross-currency swap designated as a cash-flow hedge. The redemption of debentures and derecognition of the swap resulted in a pre-tax increase of $21 to net investment income and $8 to income tax expense within the U.S. segment of the Consolidated Statements of Earnings.

On February 8, 2017, Irish Life Assurance, an indirect wholly owned subsidiary of the Company, redeemed its 5.25% $284 (200 euro) subordinated debenture notes at their principal amount together with accrued interest.

On May 26, 2017, Great-West Lifeco Finance (Delaware) LP issued $925 (U.S. $700) principal amount 4.150% senior unsecured notes that are fully and unconditionally guaranteed by Lifeco, maturing on June 3, 2047.

On June 21, 2017, Great-West Lifeco Finance (Delaware) LP redeemed all $1,000 principal amount of its 5.691% subordinated debentures at a redemption price equal to 100% of the principal amount of the debentures, plus accrued interest up to but excluding the redemption date. The debentures were hedged using a cross-currency swap designated as a cash flow hedge. Upon redemption of the debentures, the gains on the debentures realized and the losses realized on the hedging instrument were recorded in the Consolidated Statements of Earnings with no impact on net earnings. The deferred income taxes related to this cash flow hedge resulted in a reduction to Other Comprehensive Income of $97 that had not previously been recorded (note 25).

Capital Trust Securities

CLCT, a trust established by Canada Life, had issued $150 of Canada Life Capital Securities – Series B (CLiCS – Series B), the proceeds of which were used by CLCT to purchase Canada Life senior debentures in the amount of $150.

Distributions and interest on the capital trust securities are classified as financing charges in the Consolidated Statements of Earnings (note 17). The fair value for capital trust securities is determined by the bid-ask price. Refer to note 9 for financial instrument risk management disclosures.

Subject to regulatory approval, CLCT may redeem the CLiCS – Series B, in whole or in part, at any time.

17. Financing Charges

Financing charges consist of the following:

	2018	2017
Operating charges:		
Interest on operating lines and short-term debt instruments	$ 10	$ 7
Financial charges:		
Interest on long-term debentures and other debt instruments	182	253
Interest on capital trust securities	11	11
Other	18	29
	211	293
Total	$ 221	$ 300

18. Other Liabilities

	2018	2017
Pension and other post-employment benefits (note 24)	$ 1,331	$ 1,416
Bank overdraft	457	435
Deferred income reserves	441	303
Other	1,626	1,598
Total	$ 3,855	$ 3,752

Total other liabilities of $2,083 ($2,033 at December 31, 2017) are expected to be realized within 12 months from the reporting date. This amount excludes deferred income reserves, the changes in which are noted below.

Deferred income reserves	2018	2017
Balance, beginning of year	$ 303	$ 309
Additions (1)	200	45
Amortization	(61)	(35)
Changes in foreign exchange	11	8
Disposals	(12)	(24)
Balance, end of year	$ 441	$ 303

(1) During 2018, a change in estimate of $154 was recognized related to certain single premium contracts.

19. Non-Controlling Interests

The Company had a controlling equity interest in Great-West Life, London Life, Canada Life, Great-West Financial, and Putnam at December 31, 2018 and December 31, 2017.

Non-controlling interests attributable to participating account surplus is the proportion of the equity attributable to the participating account of the Company's subsidiaries.

During 2018, Irish Life Group Limited acquired a controlling interest in Invesco Ltd. (Ireland). This transaction increased non-controlling interests by $20 (note 3).

Non-controlling interests in subsidiaries also includes Nippon Life's interest in PanAgora, a subsidiary of Putnam, and non-controlling interests for the issued and outstanding shares of Putnam and PanAgora held by employees of the respective companies. During 2018, the Company acquired Nippon Life's interest in PanAgora. This transaction decreased non-controlling interests by $21 (note 3).

(a) The non-controlling interests of Great-West Life, London Life, Canada Life, Great-West Financial and Putnam and their subsidiaries recorded in the Consolidated Statements of Earnings and other comprehensive income are as follows:

	2018	2017
Net earnings attributable to participating account before policyholder dividends		
Great-West Life	$ **155**	$ 180
London Life	**902**	847
Canada Life	**273**	299
Great-West Financial	**2**	3
	1,332	1,329
Policyholder dividends		
Great-West Life	**(167)**	(159)
London Life	**(862)**	(814)
Canada Life	**(320)**	(312)
Great-West Financial	**(3)**	(4)
	(1,352)	(1,289)
Net earnings (loss) – participating account	**(20)**	40
Non-controlling interests in subsidiaries	**1**	(10)
Total	$ **(19)**	$ 30

The non-controlling interests of Great-West Life, London Life, Canada Life, Great-West Financial and Putnam and their subsidiaries recorded in other comprehensive income (loss) for the year ended December 31, 2018 was $(27) ($(63) for the year ended December 31, 2017).

(b) The carrying value of non-controlling interests consists of the following:

	2018	2017
Participating account surplus in subsidiaries:		
Great-West Life	$ **608**	$ 622
London Life	**1,827**	1,796
Canada Life	**288**	339
Great-West Financial	**14**	14
Total	$ **2,737**	$ 2,771
Non-controlling interests in subsidiaries	$ **138**	$ 164

20. Share Capital

Authorized

Unlimited First Preferred Shares, Class A Preferred Shares and Second Preferred Shares

Unlimited Common Shares

Issued and outstanding and fully paid

	2018		2017	
	Number	**Carrying value**	Number	Carrying value
First Preferred Shares				
Series F, 5.90% Non-Cumulative	**7,740,032**	**$ 194**	7,740,032	$ 194
Series G, 5.20% Non-Cumulative	**12,000,000**	**300**	12,000,000	300
Series H, 4.85% Non-Cumulative	**12,000,000**	**300**	12,000,000	300
Series I, 4.50% Non-Cumulative	**12,000,000**	**300**	12,000,000	300
Series L, 5.65% Non-Cumulative	**6,800,000**	**170**	6,800,000	170
Series M, 5.80% Non-Cumulative	**6,000,000**	**150**	6,000,000	150
Series N, Non-Cumulative 5-Year Rate Reset	**8,524,422**	**213**	8,524,422	213
Series O, Non-Cumulative Floating Rate	**1,475,578**	**37**	1,475,578	37
Series P, 5.40% Non-Cumulative	**10,000,000**	**250**	10,000,000	250
Series Q, 5.15% Non-Cumulative	**8,000,000**	**200**	8,000,000	200
Series R, 4.80% Non-Cumulative	**8,000,000**	**200**	8,000,000	200
Series S, 5.25% Non-Cumulative	**8,000,000**	**200**	8,000,000	200
Series T, 5.15% Non-Cumulative	**8,000,000**	**200**	8,000,000	200
Total	**108,540,032**	**$ 2,714**	108,540,032	$ 2,714
Common shares				
Balance, beginning of year	**988,722,659**	**$ 7,260**	986,398,335	$ 7,130
Purchased and cancelled under Normal Course Issuer Bid	**(2,127,300)**	**(69)**	(1,800,000)	(63)
Excess of redemption proceeds over stated capital per Normal Course Issuer Bid	**–**	**53**	–	50
Exercised and issued under stock option plan	**1,144,049**	**39**	4,124,324	143
Balance, end of year	**987,739,408**	**$ 7,283**	988,722,659	$ 7,260

Preferred Shares

On May 18, 2017 the Company issued 8,000,000 Series T, 5.15% Non-Cumulative First Preferred Shares at $25.00 per share for gross proceeds of $200. The shares are redeemable at the option of the Company on or after June 30, 2022 for $25.00 per share plus a premium if redeemed prior to June 30, 2026, in each case together with all declared and unpaid dividends up to but excluding the date of redemption. Transaction costs incurred in connection with the preferred share issue of $5 ($3 after-tax) were charged to accumulated surplus.

The Series F, 5.90% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series G, 5.20% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series H, 4.85% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series I, 4.50% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series L, 5.65% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series M, 5.80% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share plus a premium if redeemed prior to March 31, 2019, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series N, Non-Cumulative 5-Year Rate Reset First Preferred Shares carry an annual fixed non-cumulative dividend rate of 2.176% up to but excluding December 31, 2020 and are redeemable at the option of the Company on December 31, 2020 and on December 31 every five years thereafter for $25.00 per share plus all declared and unpaid dividends up to but excluding the date of redemption. Subject to the Company's right of redemption and certain other restrictions on conversion described in the Series N share conditions, each Series N share is convertible into one Series O share at the option of the holders on December 31, 2020 and on December 31 every five years thereafter.

The Series O, Non-Cumulative Floating Rate First Preferred Shares carry a floating non-cumulative dividend rate equal to the relevant Government of Canada Treasury Bill rate plus 1.30% and are redeemable at the option of the Company for $25.50 per share, unless the shares are redeemed on December 31, 2020 or on December 31 every five years thereafter in which case the redemption price will be $25.00 per share, plus in each case all declared and unpaid dividends up to but excluding the date of redemption. Subject to the Company's right of redemption and certain other restrictions on conversion described in the Series O share conditions, each Series O share is convertible into one Series N share at the option of the holders on December 31, 2020 and on December 31 every five years thereafter.

The Series P, 5.40% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share plus a premium if redeemed prior to March 31, 2021, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series Q, 5.15% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share plus a premium if redeemed prior to September 30, 2021, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series R, 4.80% Non-Cumulative First Preferred Shares are currently redeemable at the option of the Company for $25.00 per share plus a premium if redeemed prior to December 31, 2021, together with all declared and unpaid dividends up to but excluding the date of redemption.

The Series S, 5.25% Non-Cumulative First Preferred Shares are redeemable at the option of the Company on or after June 30, 2019 for $25.00 per share plus a premium if redeemed prior to June 30, 2023, together with all declared and unpaid dividends up to but excluding the date of redemption.

Common Shares

Normal Course Issuer Bid

On January 10, 2018, the Company announced a normal course issuer bid commencing January 15, 2018 and terminating January 14, 2019 to purchase for cancellation up to but not more than 20,000,000 of its common shares at market prices.

During 2018, the Company repurchased and subsequently cancelled 2,127,300 common shares pursuant to its normal course issuer bid at a cost of $69 (1,800,000 during 2017 under the previous normal course issuer bid at a cost of $63). The Company's share capital was reduced by the average carrying value of the shares repurchased for cancellation. The excess paid over the average carrying value of stated capital was $53 and was recognized as a reduction to equity ($50 during 2017 under the previous normal course issuer bid).

Subsequent Event

On January 28, 2019, the Company announced a normal course issuer bid commencing February 1, 2019 and terminating January 31, 2020 to purchase for cancellation up to but not more than 20,000,000 of its common shares at market prices.

21. Earnings Per Common Share

The following provides the reconciliation between basic and diluted earnings per common share:

	2018	2017
Earnings		
Net earnings	$ **3,094**	$ 2,278
Preferred share dividends	**(133)**	(129)
Net earnings – common shareholders	$ **2,961**	$ 2,149
Number of common shares		
Average number of common shares outstanding	**988,588,610**	989,185,333
Add: Potential exercise of outstanding stock options	**510,961**	1,513,422
Average number of common shares outstanding – diluted basis	**989,099,571**	990,698,755
Basic earnings per common share	$ **2.996**	$ 2.173
Diluted earnings per common share	$ **2.994**	$ 2.170
Dividends per common share	$ **1.556**	$ 1.468

22. Capital Management

(a) Policies and Objectives

Managing capital is the continual process of establishing and maintaining the quantity and quality of capital appropriate for the Company and ensuring capital is deployed in a manner consistent with the expectations of the Company's stakeholders. For these purposes, the Board considers the key stakeholders to be the Company's shareholders, policyholders and holders of subordinated liabilities in addition to the relevant regulators in the various jurisdictions where the Company and its subsidiaries operate.

The Company manages its capital on both a consolidated basis as well as at the individual operating subsidiary level. The primary objectives of the Company's capital management strategy are:

- to maintain the capitalization of its regulated operating subsidiaries at a level that will exceed the relevant minimum regulatory capital requirements in the jurisdictions in which they operate;
- to maintain strong credit and financial strength ratings of the Company ensuring stable access to capital markets; and
- to provide an efficient capital structure to maximize shareholders' value in the context of the Company's operational risks and strategic plans.

The Company has established policies and procedures designed to identify, measure and report all material risks. Management is responsible for establishing capital management procedures for implementing and monitoring the capital plan.

The capital planning process is the responsibility of the Company's Chief Financial Officer. The capital plan is reviewed by the Executive Committee of the Board of Directors and approved by the Company's Board of Directors on an annual basis. The Board of Directors reviews and approves all capital transactions undertaken by management.

The target level of capitalization for the Company and its subsidiaries is assessed by considering various factors such as the probability of falling below the minimum regulatory capital requirements in the relevant operating jurisdiction, the views expressed by various credit rating agencies that provide financial strength and other ratings to the Company, and the desire to hold sufficient capital to be able to honour all policyholder and other obligations of the Company with a high degree of confidence.

(b) Regulatory Capital

In Canada, the Office of the Superintendent of Financial Institutions (OSFI) has established a regulatory capital adequacy measurement for life insurance companies incorporated under the Insurance Companies Act (Canada) and their subsidiaries. Effective January 1, 2018, OSFI replaced the prior Minimum Continuing Capital and Surplus Requirements (MCCSR) with the Life Insurance Capital Adequacy Test (LICAT).

The LICAT Ratio compares the regulatory capital resources of a company to its Base Solvency Buffer or required capital. The Base Solvency Buffer, defined by OSFI, is the aggregate of all defined capital requirements multiplied by a scalar of 1.05. The total capital resources are provided by the sum of Available Capital, Surplus Allowance and Eligible Deposits.

The following provides a summary of the LICAT information and ratios for Great-West Life, for the reporting year ended December 31, 2018:

	2018
Tier 1 Capital	**$ 12,455**
Tier 2 Capital	**3,686**
Total Available Capital	**16,141**
Surplus Allowance & Eligible Deposits	**10,665**
Total Capital Resources	**$ 26,806**
Base Solvency Buffer (includes 1.05 scalar)	**$ 19,165**
Total LICAT Ratio (OSFI Supervisory Target = 100%) (1)	**140%**

(1) Total Ratio (%) = (Total Capital Resources / Base Solvency Buffer (after 1.05 scalar))

For entities based in Europe, the local solvency capital regime is the Solvency II basis. At December 31, 2018 and December 31, 2017, all European regulated entities met the capital and solvency requirements as prescribed under Solvency II.

Other foreign operations and foreign subsidiaries of the Company are required to comply with local capital or solvency requirements in their respective jurisdictions. At December 31, 2018 and December 31, 2017, the Company maintained capital levels above the minimum local regulatory requirements in each of its other foreign operations.

23. Share-Based Payments

(a) The Company has a stock option plan (the Plan) pursuant to which options to subscribe for common shares of Lifeco may be granted to certain officers and employees of Lifeco and its affiliates. The Company's Human Resources Committee (the Committee) administers the Plan and, subject to the specific provisions of the Plan, fixes the terms and conditions upon which options are granted. The exercise price of each option granted under the Plan is fixed by the Committee, but cannot under any circumstances be less than the weighted average trading price per Lifeco common share on the Toronto Stock Exchange for the five trading days preceding the date of the grant. Beginning in 2019, new option grants will vest over a period of four years, and have a maximum exercise period of ten years. Prior to 2019, options generally vested over a period of five years, and had a maximum exercise period of ten years. Termination of employment may, in certain circumstances, result in forfeiture of the options, unless otherwise determined by the Committee. The maximum number of Lifeco common shares that may be issued under the Plan is currently 65,000,000.

During 2018, 2,127,300 common share options were granted (1,817,900 during 2017). The weighted average fair value of common share options granted during 2018 was $1.18 per option ($2.78 in 2017). The fair value of each common share option was estimated using the Black-Scholes option-pricing model with the following weighted average assumptions used for those options granted in 2018: dividend yield 4.55% (3.98% in 2017), expected volatility 8.75% (14.06% in 2017), risk-free interest rate 2.09% (1.41% in 2017), and expected life of eight years (eight in 2017).

The following summarizes the changes in options outstanding and the weighted average exercise price:

	2018		2017	
	Options	**Weighted average exercise price**	Options	Weighted average exercise price
Outstanding, beginning of year	**13,400,064**	**$ 32.10**	16,527,750	$ 31.42
Granted	**2,127,300**	**34.21**	1,817,900	36.87
Exercised	**(1,144,049)**	**30.62**	(4,124,324)	30.61
Forfeited/expired	**(326,120)**	**34.02**	(821,262)	36.51
Outstanding, end of year	**14,057,195**	**$ 32.49**	13,400,064	$ 32.10
Options exercisable at end of year	**8,680,938**	**$ 30.95**	7,737,717	$ 29.98

The weighted average share price at the date of exercise of stock options for the year ended December 31, 2018 was $33.46 ($37.13 in 2017).

Compensation expense due to the Plan transactions accounted for as equity-settled share-based payments of $5 after-tax in 2018 ($8 after-tax in 2017) has been recognized in the Consolidated Statements of Earnings.

The following summarizes information on the ranges of exercise prices including weighted average remaining contractual life at December 31, 2018:

	Outstanding			Exercisable		
Exercise price ranges	**Options**	**Weighted average remaining contractual life**	**Weighted average exercise price**	**Options**	**Weighted average exercise price**	**Expiry**
$23.16 – $35.62	259,931	0.50	29.16	259,931	29.16	2019
$23.16 – $36.87	656,146	1.43	29.53	650,726	29.48	2020
$23.16 – $36.87	1,031,500	2.24	28.98	1,001,820	28.79	2021
$23.16 – $36.87	1,589,515	3.23	26.26	1,589,515	26.26	2022
$27.13 – $36.87	1,767,099	4.29	30.64	1,767,099	30.64	2023
$30.33 – $36.87	1,234,543	5.17	31.76	896,227	31.33	2024
$35.62 – $36.63	1,907,839	6.17	35.66	1,206,471	35.66	2025
$34.68 – $35.52	2,333,422	7.16	34.68	1,003,269	34.68	2026
$36.87 – $36.87	1,411,400	8.16	36.87	296,680	36.87	2027
$34.21 – $34.21	1,865,800	9.16	34.21	9,200	34.21	2028

(b) To promote greater alignment of interests between the Directors and the shareholders of the Company, the Company and certain of its subsidiaries have established mandatory Deferred Share Unit Plans and/or voluntary Deferred Share Unit Plans (the "Mandatory DSU Plans" and the "Voluntary DSU Plans" respectively) in which the Directors of the Company participate. Under the Mandatory DSU Plans, each Director who is a resident of Canada or the United States must receive 50% of his or her annual Board retainer in the form of Deferred Share Units (DSUs). Under the Voluntary DSU Plans, each Director may elect to receive the balance of his or her annual Board retainer and Board Committee fees entirely in the form of DSUs, entirely in cash, or equally in cash and DSUs. In both cases the number of DSUs granted is determined by dividing the amount of remuneration payable to the Director by the weighted average trading price per Lifeco common share on the Toronto Stock Exchange (TSX) for the last five trading days of the preceding fiscal quarter. Directors receive additional DSUs for dividends payable on the Company's common shares based on the value of a DSU at the dividend payment date. DSUs are redeemable when an individual ceases to be a Director, or as applicable, an officer or employee of the Company or any of its affiliates by a lump sum cash payment, based on the weighted average trading price per Lifeco common share on the TSX for the last five trading days preceding the date of redemption. In 2018, $5 in directors' fees were used to acquire DSUs ($3 in 2017).

(c) Certain employees of the Company are entitled to receive Performance Share Units (PSUs). Under these PSU plans, these employees are granted PSUs equivalent to the Company's common shares vesting over a three-year period. Employees receive additional PSUs in respect of dividends payable on the common shares based on the value of a PSU at that time. At the maturity date, employees receive cash representing the value of the PSU at this date. The Company uses the fair-value based method to account for the PSUs granted to employees under the plan. For the year ended December 31, 2018, the Company recognized compensation expense of $22 ($23 in 2017) for the PSU plans recorded in operating and administrative expenses in the Consolidated Statements of Earnings. At December 31, 2018, the carrying value of the PSU liability is $40 ($41 in 2017) recorded within other liabilities.

(d) The Company's Employee Share Ownership Plan (ESOP) is a voluntary plan where eligible employees can contribute up to 5% of their previous year's eligible earnings to purchase common shares of Great-West Lifeco Inc. The Company matches 50% of the total employee contributions. The contributions from the Company vest immediately and are expensed. For the year ended December 31, 2018, the Company recognized compensation expense of $11 ($12 in 2017) for the ESOP recorded in operating and administrative expenses in the Consolidated Statements of Earnings.

(e) Putnam sponsors the Putnam Investments, LLC Equity Incentive Plan. Under the terms of the Equity Incentive Plan, Putnam is authorized to grant or sell Class B Shares of Putnam (the Putnam Class B Shares), subject to certain restrictions, and to grant options to purchase Putnam Class B Shares (collectively, the Awards) to certain senior management and key employees of Putnam at fair value at the time of the award. Fair value is determined under the valuation methodology outlined in the Equity Incentive Plan. Awards vest over a period of up to five years and are specified in the individual's award letter. Holders of Putnam Class B Shares are not entitled to vote other than in respect of certain matters in regards to the Equity Incentive Plan and have no rights to convert their shares into any other securities. The number of Putnam Class B Shares that may be subject to Awards under the Equity Incentive Plan is limited to 10,555,555.

During 2018, Putnam granted 1,159,000 (1,138,580 in 2017) restricted Class B common shares and no options in 2018 or 2017 to certain members of senior management and key employees.

Compensation expense recorded for the year ended December 31, 2018 related to restricted Class B common shares and Class B stock options earned was $20 ($27 in 2017) and is recorded in operating and administrative expenses in the Consolidated Statements of Earnings.

(f) Certain employees of PanAgora, a subsidiary of Putnam, are eligible to participate in the PanAgora Management Equity Plan under which Class C Shares of PanAgora and options and stock appreciation rights on Class C Shares of PanAgora may be issued. Holders of PanAgora Class C Shares are not entitled to vote and have no rights to convert their shares into any other securities. The number of PanAgora Class C Shares may not exceed 20% of the equity of PanAgora on a fully exercised and converted basis.

Compensation expense recorded for the year ended December 31, 2018 related to restricted Class C Shares and stock appreciation rights was $13 in 2018 ($13 in 2017) and is included as a component of operating and administrative expenses in the Consolidated Statements of Earnings.

24. Pension Plans and Other Post-Employment Benefits

Characteristics, Funding and Risk

The Company's subsidiaries maintain contributory and non-contributory defined benefit pension plans for certain employees and advisors. The Company's subsidiaries also maintain defined contribution pension plans for certain employees and advisors.

The defined benefit pension plans provide pensions based on length of service and final average pay. For most plans, active plan participants share in the cost by making contributions in respect of current service. Certain pension payments are indexed either on an ad hoc basis or a guaranteed basis. The determination of the defined benefit obligation reflects pension benefits in accordance with the terms of the plans. The assets supporting the funded pension plans are held in separate trusteed pension funds. The obligations for the wholly unfunded plans are included in other liabilities and are supported by general assets.

The defined benefit plans of the Company's subsidiaries are closed to new entrants with plans in several geographies also closed to future defined benefit accruals. New hires are eligible only for defined contribution benefits. Active plan participants in defined benefit plans closed to future defined benefit accruals are eligible to accrue defined contribution benefits. The Company's defined benefit plan exposure will continue to be reduced in future years.

The defined contribution pension plans provide pension benefits based on accumulated employee and subsidiary company contributions. Subsidiary company contributions to these plans are a set percentage of employees' annual income and may be subject to certain vesting requirements.

The Company's subsidiaries also provide post-employment health, dental and life insurance benefits to eligible employees, advisors and their dependents. Retirees share in the cost of benefits through deductibles, co-insurance and caps on benefits. These plans are closed to new hires and were previously amended to limit which employees could become eligible to receive benefits. The amount of some of the post-employment benefits other than pensions depends on future cost escalation. These post-employment benefits are not pre-funded and the amount of the obligation for these benefits is included in other liabilities and is supported by general assets.

The Company's subsidiaries have pension and benefit committees or a trusteed arrangement that provides oversight for the benefit plans of the Company's subsidiaries. The benefit plans are monitored on an ongoing basis to assess the benefit, funding and investment policies, financial status, and funding requirements of the Company's subsidiaries. Significant changes to the subsidiary company's benefit plans require approval from that Company's Board of Directors.

The Company's subsidiaries' funding policy for the funded pension plans is to make contributions equal to or greater than those required by the applicable regulations and plan provisions that govern the funding of the plans. Where funded plans have a net defined benefit pension plan asset, the Company determines if an economic benefit exists in the form of potential reductions in future contributions by the Company, from the payment of expenses from the plan and in the form of surplus refunds, where permitted by applicable regulation and plan provisions.

By their design, the defined benefit plans expose the Company to the typical risks faced by defined benefit plans such as investment performance, changes to the discount rates used to value the obligations, longevity of plan members, and future inflation. Pension and benefit risk is managed by regular monitoring of the plans, applicable regulations and other factors that could impact the expenses and cash flows of the Company.

24. Pension Plans and Other Post-Employment Benefits (cont'd)

The following reflects the financial position of the Company's subsidiaries contributory and non-contributory defined benefit plans:

(a) Plan Assets, Benefit Obligation and Funded Status

	Defined benefit pension plans		Other post-employment benefits	
	2018	2017	2018	2017
Change in fair value of plan assets				
Fair value of plan assets, beginning of year	**$ 6,670**	$ 6,207	**$ –**	$ –
Interest income	**206**	205	**–**	–
Actual return over (less than) interest income	**(338)**	298	**–**	–
Employer contributions	**176**	178	**19**	19
Employee contributions	**13**	17	**–**	–
Benefits paid	**(350)**	(314)	**(19)**	(19)
Settlements	**(7)**	–	**–**	–
Administrative expenses	**(8)**	(8)	**–**	–
Net transfer out	**(8)**	(7)	**–**	–
Foreign exchange rate changes	**130**	94	**–**	–
Fair value of plan assets, end of year	**$ 6,484**	$ 6,670	**$ –**	$ –
Change in defined benefit obligation				
Defined benefit obligation, beginning of year	**$ 7,401**	$ 6,942	**$ 400**	$ 396
Current service cost	**110**	139	**2**	2
Interest cost	**228**	227	**14**	15
Employee contributions	**13**	17	**–**	–
Benefits paid	**(350)**	(314)	**(19)**	(19)
Plan amendments	**6**	(1)	**–**	–
Curtailments and termination benefits (1)	**(3)**	(37)	**–**	1
Settlements	**(8)**	–	**–**	–
Actuarial loss (gain) on financial assumption changes	**(292)**	334	**(19)**	15
Actuarial gain (loss) on demographic assumption changes	**(85)**	6	**(9)**	(9)
Actuarial loss (gain) arising from member experience	**26**	10	**(1)**	1
Net transfer out	**(8)**	(7)	**–**	–
Foreign exchange rate changes	**151**	85	**2**	(2)
Defined benefit obligation, end of year	**$ 7,189**	$ 7,401	**$ 370**	$ 400
Asset (liability) recognized on the Consolidated Balance Sheets				
Funded status of plans – surplus (deficit)	**$ (710)**	$ (731)	**$ (370)**	$ (400)
Unrecognized amount due to asset ceiling	**(103)**	(92)	**–**	–
Asset (liability) recognized on the Consolidated Balance Sheets	**$ (813)**	$ (823)	**$ (370)**	$ (400)
Recorded in:				
Other assets (note 13)	**$ 148**	$ 193	**$ –**	$ –
Other liabilities (note 18)	**(961)**	(1,016)	**(370)**	(400)
Asset (liability) recognized on the Consolidated Balance Sheets	**$ (813)**	$ (823)	**$ (370)**	$ (400)
Analysis of defined benefit obligation				
Wholly or partly funded plans	**$ 6,886**	$ 7,092	**$ –**	$ –
Wholly unfunded plans	**$ 303**	$ 309	**$ 370**	$ 400

(1) The impact of curtailments and termination benefits resulting from the Canadian Business Transformation were recognized as part of the 2017 restructuring provision (note 5) and are not included in Pension and Other Post-Employment Benefits expense.

Under International Financial Reporting Interpretations Committee (IFRIC) 14, *The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction*, the Company must assess whether each pension plan's asset has economic benefit to the Company through future contribution reductions, from the payment of expenses from the plan, or surplus refunds; in the event the Company is not entitled to a benefit, a limit or 'asset ceiling' is required on the balance. The following provides a breakdown of the changes in the asset ceiling:

	Defined benefit pension plans	
	2018	2017
Change in asset ceiling		
Asset ceiling, beginning of year	**$ 92**	$ 91
Interest on asset ceiling	**3**	4
Change in asset ceiling	**8**	(3)
Asset ceiling, end of year	**$ 103**	$ 92

(b) Pension and Other Post-Employment Benefits Expense

The total pension and other post-employment benefit expense included in operating expenses and other comprehensive income are as follows:

	All pension plans		Other post-employment benefits	
	2018	2017	**2018**	2017
Defined benefit current service cost	**$ 123**	$ 156	**$ 2**	$ 2
Defined contribution current service cost	**104**	72	**–**	–
Employee contributions	**(13)**	(17)	**–**	–
Employer current service cost	**214**	211	**2**	2
Administrative expense	**8**	8	**–**	–
Plan amendments	**6**	(1)	**–**	–
Curtailments	**(2)**	(22)	**–**	–
Settlements	**(1)**	–	**–**	–
Net interest cost	**25**	26	**14**	15
Expense – profit or loss	**250**	222	**16**	17
Actuarial (gain) loss recognized	**(351)**	350	**(29)**	7
Return on assets (greater) less than assumed	**338**	(298)	**–**	–
Change in the asset ceiling	**8**	(3)	**–**	–
Actuarial loss – investment in associate	**–**	1	**–**	–
Re-measurements – other comprehensive (income) loss	**(5)**	50	**(29)**	7
Total expense (income) including re-measurements	**$ 245**	$ 272	**$ (13)**	$ 24

(c) Asset Allocation by Major Category Weighted by Plan Assets

	Defined benefit pension plans	
	2018	2017
Equity securities	**41%**	44%
Debt securities	**49%**	43%
Real estate	**8%**	8%
Cash and cash equivalents	**2%**	5%
Total	**100%**	100%

No plan assets are directly invested in the Company's or related parties' securities. Plan assets include investments in segregated funds and other funds managed by subsidiaries of the Company of $5,501 at December 31, 2018 and $5,694 at December 31, 2017, of which $5,431 ($5,616 at December 31, 2017) are included on the Consolidated Balance Sheets. Plan assets do not include any property occupied or other assets used by the Company.

24. Pension Plans and Other Post-Employment Benefits (cont'd)

(d) Details of Defined Benefit Obligation

(i) Portion of Defined Benefit Obligation Subject to Future Salary Increases

	Defined benefit pension plans		Other post-employment benefits	
	2018	2017	**2018**	2017
Benefit obligation without future salary increases	**$ 6,581**	$ 6,710	**$ 370**	$ 400
Effect of assumed future salary increases	**608**	691	**–**	–
Defined benefit obligation	**$ 7,189**	$ 7,401	**$ 370**	$ 400

The other post-employment benefits are not subject to future salary increases.

(ii) Portion of Defined Benefit Obligation Without Future Pension Increases

	Defined benefit pension plans		Other post-employment benefits	
	2018	2017	**2018**	2017
Benefit obligation without future pension increases	**$ 6,567**	$ 6,834	**$ 370**	$ 400
Effect of assumed future pension increases	**622**	567	**–**	–
Defined benefit obligation	**$ 7,189**	$ 7,401	**$ 370**	$ 400

The other post-employment benefits are not subject to future pension increases.

(iii) Maturity Profile of Plan Membership

	Defined benefit pension plans		Other post-employment benefits	
	2018	2017	**2018**	2017
Actives	**38%**	37%	**19%**	21%
Deferred vesteds	**23%**	26%	**n/a**	n/a
Retirees	**39%**	37%	**81%**	79%
Total	**100%**	100%	**100%**	100%
Weighted average duration of defined benefit obligation	**17.9 years**	18.7 years	**11.4 years**	12.2 years

(e) Cash Flow Information

	Pension plans	Other post-employment benefits	Total
Expected employer contributions for 2019:			
Funded (wholly or partly) defined benefit plans	$ 146	$ –	$ 146
Unfunded plans	15	21	36
Defined contribution plans	113	–	113
Total	**$ 274**	**$ 21**	**$ 295**

(f) Actuarial Assumptions and Sensitivities

(i) Actuarial Assumptions

	Defined benefit pension plans		Other post-employment benefits	
	2018	2017	**2018**	2017
To determine benefit cost:				
Discount rate – past service liabilities	**3.1%**	3.3%	**3.5%**	3.8%
Discount rate – future service liabilities	**3.4%**	3.4%	**3.8%**	4.3%
Rate of compensation increase	**3.1%**	3.2%	**–**	–
Future pension increases (1)	**1.3%**	1.1%	**–**	–
To determine defined benefit obligation:				
Discount rate – past service liabilities	**3.4%**	3.1%	**3.8%**	3.5%
Rate of compensation increase	**3.0%**	3.1%	**–**	–
Future pension increases (1)	**1.4%**	1.3%	**–**	–
Medical cost trend rates:				
Initial medical cost trend rate			**4.8%**	5.0%
Ultimate medical cost trend rate			**4.1%**	4.5%
Year ultimate trend rate is reached			**2040**	2029

(1) Represents the weighted average of plans subject to future pension increases.

(ii) Sample Life Expectancies Based on Mortality Assumptions

	Defined benefit pension plans		Other post-employment benefits	
	2018	2017	**2018**	2017
Sample life expectancies based on mortality assumption:				
Male				
Age 65 in fiscal year	**22.6**	22.9	**22.3**	22.3
Age 65 for those age 35 in the fiscal year	**24.7**	25.1	**24.0**	23.9
Female				
Age 65 in fiscal year	**24.7**	24.8	**24.7**	24.7
Age 65 for those age 35 in the fiscal year	**26.7**	26.9	**26.2**	26.2

The period of time over which benefits are assumed to be paid is based on best estimates of future mortality, including allowances for mortality improvements. This estimate is subject to considerable uncertainty, and judgment is required in establishing this assumption. As mortality assumptions are significant in measuring the defined benefit obligation, the mortality assumptions applied by the Company take into consideration such factors as age, gender and geographic location, in addition to an estimation of future improvements in longevity.

The mortality tables are reviewed at least annually, and assumptions are in accordance with accepted actuarial practice. Emerging plan experience is reviewed and considered in establishing the best estimate for future mortality.

The calculation of the defined benefit obligation is sensitive to the mortality assumptions. The effect of a one-year increase in life expectancy would be an increase in the defined benefit obligation of $221 for the defined benefit pension plans and $13 for other post-employment benefits.

(iii) Impact of Changes to Assumptions on Defined Benefit Obligation

	1% increase		1% decrease	
	2018	2017	**2018**	2017
Defined benefit pension plans:				
Impact of a change to the discount rate	**$ (1,109)**	$ (1,187)	**$ 1,444**	$ 1,553
Impact of a change to the rate of compensation increase	**277**	313	**(252)**	(270)
Impact of a change to the rate of inflation	**526**	582	**(477)**	(514)
Other post-employment benefits:				
Impact of a change to assumed medical cost trend rates	**26**	32	**(23)**	(27)
Impact of a change to the discount rate	**(38)**	(43)	**46**	52

To measure the impact of a change in an assumption, all other assumptions were held constant. It is expected that there would be interaction between at least some of the assumptions.

25. Accumulated Other Comprehensive Income

	2018							
	Unrealized foreign exchange gains on translation of foreign operations	Unrealized foreign exchange gains (losses) on euro debt designated as hedge of the net investment in foreign operations	Unrealized gains (losses) on available-for-sale assets	Unrealized gains (losses) on cash flow hedges	Re-measurements on defined benefit pension and other post-employment benefit plans	Total	Non-controlling interest	Shareholders
Balance, beginning of year	**$ 1,031**	**$ (100)**	**$ 109**	**$ 44**	**$ (699)**	**$ 385**	**$ 1**	**$ 386**
Other comprehensive income (loss)	**766**	**(50)**	**(108)**	**(46)**	**34**	**596**	**32**	**628**
Income tax	**–**	**7**	**21**	**13**	**(5)**	**36**	**(5)**	**31**
	766	**(43)**	**(87)**	**(33)**	**29**	**632**	**27**	**659**
Balance, end of year	**$ 1,797**	**$ (143)**	**$ 22**	**$ 11**	**$ (670)**	**$ 1,017**	**$ 28**	**$ 1,045**

	2017							
	Unrealized foreign exchange gains (losses) on translation of foreign operations	Unrealized foreign exchange gains (losses) on euro debt designated as hedge of the net investment in foreign operations	Unrealized gains (losses) on available-for-sale assets	Unrealized gains (losses) on cash flow hedges	Re-measurements on defined benefit pension and other post-employment benefit plans	Total	Non-controlling interest	Shareholders
Balance, beginning of year	$ 1,526	$ (22)	$ 160	$ (209)	$ (647)	$ 808	$ (62)	$ 746
Other comprehensive income (loss)	(495)	(90)	(65)	417	(57)	(290)	80	(210)
Income tax	–	12	14	(164)	(8)	(146)	(17)	(163)
	(495)	(78)	(51)	253	(65)	(436)	63	(373)
Disposal of investment in associate [(1)]	–	–	–	–	13	13	–	13
	(495)	(78)	(51)	253	(52)	(423)	63	(360)
Balance, end of year	$ 1,031	$ (100)	$ 109	$ 44	$ (699)	$ 385	$ 1	$ 386

(1) During 2017, the Company transferred actuarial losses of $13 from accumulated other comprehensive income to accumulated surplus. These losses were for accumulated pension plan re-measurements for an investment in an associate that was disposed of.

26. Related Party Transactions

Power Financial, which is incorporated and domiciled in Canada, is the Company's parent and has voting control of the Company. The Company is related to other members of the Power Financial group including IGM Financial Inc., a company in the financial services sector along with its subsidiaries IG Wealth Management, Mackenzie Financial and Investment Planning Council and Pargesa, a holding company with substantial holdings in a diversified industrial group based in Europe.

(a) Principal subsidiaries

The consolidated financial statements of the Company include the operations of the following subsidiaries and their subsidiaries:

Company	Incorporated in	Primary business operation	% Held
The Great-West Life Assurance Company	Canada	Insurance and wealth management	100.00%
London Life Insurance Company	Canada	Insurance and wealth management	100.00%
The Canada Life Assurance Company	Canada	Insurance and wealth management	100.00%
Great-West Life & Annuity Insurance Company	United States	Insurance and wealth management	100.00%
Putnam Investments, LLC	United States	Financial services	100.00%[(1)]

(1) Lifeco holds 100% of the voting shares and 96.72% of the total outstanding shares.

(b) Transactions with related parties included in the consolidated financial statements

In the normal course of business, Great-West Life and Putnam enter into various transactions with related companies which include providing insurance benefits and sub-advisory services to other companies within the Power Financial group of companies. In all cases, transactions were at market terms and conditions.

During the year, Great-West Life provided to and received from IGM and its subsidiaries, a member of the Power Financial group of companies, certain administrative services. Great-West Life also provided life insurance, annuity and disability insurance products under a distribution agreement with IGM. London Life provided distribution services to IGM. All transactions were provided at market terms and conditions.

Segregated funds of the Company were invested in funds managed by IG Wealth Management and Mackenzie Investments. The Company also has interests in mutual funds, open-ended investment companies and unit trusts. Some of these funds are managed by related parties of the Company and the Company receives management fees related to these services. All transactions were provided at market terms and conditions (note 15).

The Company held debentures issued by IGM; the interest rates and maturity dates are as follows:

	2018	2017
3.44%, matures January 26, 2027	$ **10**	$ 10
6.65%, matures December 13, 2027	**16**	16
7.45%, matures May 9, 2031	**13**	14
7.00%, matures December 31, 2032	**13**	13
4.56%, matures January 25, 2047	**20**	21
4.115%, matures December 9, 2047	**9**	–
4.174%, matures July 13, 2048	**5**	–
Total	$ **86**	$ 74

During 2018, the Company purchased debentures from IGM with a total market value at December 31, 2018 of $14 ($31 during 2017).

During 2018, the Company purchased residential mortgages of $61 from IGM ($137 in 2017).

The Company holds investments in Portag3 Ventures Limited Partnership, Portag3 Ventures II Limited Partnership and other entities which invest in the FinTech sector. These investments were made in partnership with Power Financial, IGM and, in certain circumstances, outside investors.

The Company provides asset management, employee benefits and administrative services for employee benefit plans relating to pension and other post-employment benefits for employees of the Company and its subsidiaries. These transactions were provided at market terms and conditions.

There were no significant outstanding loans or guarantees and no material loans or guarantees issued during 2018 or 2017. There were no provisions for uncollectible amounts from related parties during 2018 and 2017.

(c) Key management compensation

Key management personnel constitute those individuals that have the authority and responsibility for planning, directing and controlling the activities of Lifeco, directly or indirectly, including any Director. The individuals that comprise the key management personnel are the Board of Directors as well as certain key management and officers.

The following describes all compensation paid to, awarded to, or earned by each of the key management personnel for services rendered in all capacities to the Company and its subsidiaries:

	2018	2017
Salary	$ **17**	$ 14
Share-based awards	**12**	9
Option-based awards	**5**	2
Annual non-equity incentive plan compensation	**23**	21
Pension value	**5**	5
Other	**–**	2
Total	$ **62**	$ 53

27. Income Taxes

(a) Components of the income tax expense

(i) Income tax recognized in Consolidated Statements of Earnings

Current income tax

	2018	2017
Total current income tax	**$ 321**	$ 259

Deferred income tax

	2018	2017
Origination and reversal of temporary differences	**$ 52**	$ (8)
Effect of changes in tax rates or imposition of new income taxes	**(2)**	142
Tax expense arising from unrecognized tax losses and tax credits	**16**	29
Total deferred income tax	**$ 66**	$ 163
Total income tax expense	**$ 387**	$ 422

(ii) Income tax recognized in other comprehensive income (note 25)

	2018	2017
Current income tax expense (recovery)	**$ (2)**	$ (13)
Deferred income tax expense (recovery)	**(34)**	159
Total	**$ (36)**	$ 146

(iii) Income tax recognized in Consolidated Statements of Changes in Equity

	2018	2017
Current income tax expense	**$ –**	$ –
Deferred income tax recovery	**(16)**	(10)
Total	**$ (16)**	$ (10)

(b) The effective income tax rate reported in the Consolidated Statements of Earnings varies from the combined Canadian federal and provincial income tax rate of 27% for the following items:

	2018		2017	
Earnings before income taxes	**$ 3,462**		$ 2,730	
Combined basic Canadian federal and provincial tax rate	**935**	**27.00%**	730	26.75%
Increase (decrease) in the income tax rate resulting from:				
Non-taxable investment income	**(216)**	**(6.24)**	(205)	(7.51)
Lower effective income tax rates on income not subject to tax in Canada [(1)]	**(313)**	**(9.03)**	(207)	(7.58)
Impact of other rate changes on deferred income taxes	**(2)**	**(0.06)**	7	0.25
Other	**(17)**	**(0.49)**	(38)	(1.39)
U.S. tax reform impact of rate change on deferred income taxes	**–**	**–**	135	4.94
Total income tax expense and effective income tax rate	**$ 387**	**11.18%**	$ 422	15.46%

(1) In 2018, there is a higher percentage of income subject to lower rates in foreign jurisdictions, that includes the impact of the lower U.S. corporate federal income tax rate as a result of 2017 U.S. tax reform.

(c) Composition and changes in net deferred income tax assets are as follows:

2018	Insurance and investment contract liabilities	Portfolio investments	Losses carried forward	Intangible assets	Tax credits	Other	Total
Balance, beginning of year	**$ (976)**	**$ (602)**	**$ 1,132**	**$ (401)**	**$ 391**	**$ 192**	**$ (264)**
Recognized in Statements of Earnings	**(395)**	**227**	**129**	**(63)**	**(44)**	**80**	**(66)**
Recognized in Statements of Comprehensive Income	**–**	**40**	**–**	**–**	**–**	**(6)**	**34**
Recognized in Statements of Changes in Equity	**9**	**–**	**–**	**–**	**–**	**7**	**16**
Acquired in business acquisitions	**41**	**–**	**–**	**–**	**–**	**(8)**	**33**
Foreign exchange rate changes and other	**(66)**	**(24)**	**96**	**(15)**	**16**	**11**	**18**
Balance, end of year	**$ (1,387)**	**$ (359)**	**$ 1,357**	**$ (479)**	**$ 363**	**$ 276**	**$ (229)**

	2017						
	Insurance and investment contract liabilities	Portfolio investments	Losses carried forward	Intangible assets	Tax credits	Other	Total
Balance, beginning of year	$ (1,429)	$ (654)	$ 1,775	$ (458)	$ 375	$ 463	$ 72
Recognized in Statements of Earnings	391	28	(596)	88	30	(104)	(163)
Recognized in Statements of Comprehensive Income	–	8	–	–	–	(167)	(159)
Recognized in Statements of Changes in Equity	–	–	–	–	–	10	10
Acquired in business acquisitions	–	–	2	(42)	–	1	(39)
Foreign exchange rate changes and other	62	16	(49)	11	(14)	(11)	15
Balance, end of year	$ (976)	$ (602)	$ 1,132	$ (401)	$ 391	$ 192	$ (264)

	2018	2017
Recorded on Consolidated Balance Sheets:		
Deferred tax assets	$ **981**	$ 930
Deferred tax liabilities	**(1,210)**	(1,194)
Total	$ **(229)**	$ (264)

A deferred income tax asset is recognized for deductible temporary differences and unused losses and carryforwards only to the extent that realization of the related income tax benefit through future taxable profits is probable.

Recognition is based on the fact that it is probable that the entity will have taxable profits and/or tax planning opportunities available to allow the deferred income tax asset to be utilized. Changes in circumstances in future periods may adversely impact the assessment of the recoverability. The uncertainty of the recoverability is taken into account in establishing the deferred income tax assets. The Company's annual financial planning process provides a significant basis for the measurement of deferred income tax assets.

Management assesses the recoverability of the deferred income tax assets carrying values based on future years' taxable income projections and believes the carrying values of the deferred income tax assets as of December 31, 2018 are recoverable.

At December 31, 2018, the Company has recognized a deferred tax asset of $1,357 ($1,132 at December 31, 2017) on tax loss carryforwards totaling $8,568 ($7,670 in 2017). Of this amount, $7,527 expire between 2019 and 2038, while $1,041 have no expiry date. The Company will realize this benefit in future years through a reduction in current income taxes payable.

One of the Company's subsidiaries has had a history of losses. The subsidiary has a net deferred income tax asset balance of $775 (U.S. $570) as at December 31, 2018 comprised principally of net operating losses and future deductions related to goodwill which has been, in prior years, impaired for accounting purposes. Management has concluded that it is probable that the subsidiary and other historically profitable subsidiaries with which it files or intends to file a consolidated U.S. income tax return will generate sufficient taxable income against which the unused U.S. losses and deductions will be utilized.

The Company has not recognized a deferred tax asset of $37 ($41 in 2017) on tax loss carryforwards totaling $179 ($186 in 2017). Of this amount, $112 expire between 2019 and 2038 while $67 have no expiry date.

A deferred income tax liability has not been recognized in respect of the temporary differences associated with investments in subsidiaries, branches and associates as the Company is able to control the timing of the reversal of the temporary differences, and it is probable that the temporary differences will not reverse in the foreseeable future.

28. Operating and Administrative Expenses

	2018	2017 (note 2)
Salaries and other employee benefits	$ **3,296**	$ 3,177
General and administrative	**1,641**	1,442
Amortization of fixed assets	**96**	86
Total	$ **5,033**	$ 4,705

29. Derivative Financial Instruments

In the normal course of managing exposure to fluctuations in interest and foreign exchange rates, and to market risks, the Company is an end-user of various derivative financial instruments. It is the Company's policy to transact in derivatives only with the most creditworthy financial intermediaries. Note 9 discloses the credit quality of the Company's exposure to counterparties. Credit risk equivalent amounts are presented net of collateral received, including initial margin on exchange-traded derivatives, of $113 as at December 31, 2018 ($77 at December 31, 2017).

(a) The following summarizes the Company's derivative portfolio and related credit exposure using the following definitions of risk as prescribed by OSFI:

Maximum Credit Risk	The total replacement cost of all derivative contracts with positive values.
Future Credit Exposure	The potential future credit exposure is calculated based on a formula prescribed by OSFI. The factors prescribed by OSFI for this calculation are based on derivative type and duration.
Credit Risk Equivalent	The sum of maximum credit risk and the potential future credit exposure less any collateral held.
Risk Weighted Equivalent	Represents the credit risk equivalent, weighted according to the creditworthiness of the counterparty, as prescribed by OSFI.

	2018				
	Notional amount	**Maximum credit risk**	**Future credit exposure**	**Credit risk equivalent**	**Risk weighted equivalent**
Interest rate contracts					
Futures – long	**$ 72**	**$ –**	**$ –**	**$ –**	**$ –**
Swaps	**2,716**	**118**	**34**	**143**	**42**
Options purchased	**351**	**43**	**1**	**43**	**8**
	3,139	**161**	**35**	**186**	**50**
Foreign exchange contracts					
Forward contracts	**2,098**	**8**	**42**	**49**	**5**
Cross-currency swaps	**11,737**	**219**	**794**	**910**	**241**
	13,835	**227**	**836**	**959**	**246**
Other derivative contracts					
Equity contracts	**618**	**8**	**6**	**6**	**–**
Futures – long	**12**	**–**	**–**	**–**	**–**
Futures – short	**1,059**	**8**	**14**	**22**	**2**
Other forward contracts	**951**	**13**	**91**	**98**	**10**
	2,640	**29**	**111**	**126**	**12**
Total	**$ 19,614**	**$ 417**	**$ 982**	**$ 1,271**	**$ 308**

	2017				
	Notional amount	Maximum credit risk	Future credit exposure	Credit risk equivalent	Risk weighted equivalent
Interest rate contracts					
Futures – long	$ 25	$ –	$ –	$ –	$ –
Futures – short	52	–	–	–	–
Swaps	2,845	125	35	158	11
Options purchased	307	50	2	52	4
	3,229	175	37	210	15
Foreign exchange contracts					
Forward contracts	1,430	10	33	38	3
Cross-currency swaps	11,128	198	728	858	56
	12,558	208	761	896	59
Other derivative contracts					
Equity contracts	70	–	4	4	1
Futures – long	13	–	–	–	–
Futures – short	626	1	–	–	–
Other forward contracts	93	–	–	–	–
	802	1	4	4	1
Total	$ 16,589	$ 384	$ 802	$ 1,110	$ 75

(b) The following provides the notional amount, term to maturity and estimated fair value of the Company's derivative portfolio by category:

	2018				
	Notional Amount				Total estimated fair value
	1 year or less	Over 1–5 years	Over 5 years	Total	
Derivatives not designated as accounting hedges					
Interest rate contracts					
Futures – long	$ 46	$ 26	$ –	$ 72	$ –
Swaps	118	456	2,112	2,686	78
Options purchased	47	225	79	351	43
	211	707	2,191	3,109	121
Foreign exchange contracts					
Forward contracts	1,058	–	–	1,058	(16)
Cross-currency swaps	560	1,968	9,209	11,737	(1,224)
	1,618	1,968	9,209	12,795	(1,240)
Other derivative contracts					
Equity contracts	618	–	–	618	(8)
Futures – long	12	–	–	12	–
Futures – short	1,059	–	–	1,059	6
Other forward contracts	951	–	–	951	13
	2,640	–	–	2,640	11
Cash flow hedges					
Interest rate contracts					
Swaps	–	–	30	30	8
Net investment hedges					
Foreign exchange forward contracts	524	516	–	1,040	(45)
Total	$ 4,993	$ 3,191	$ 11,430	$ 19,614	$ (1,145)

29. Derivative Financial Instruments (cont'd)

	2017				
	Notional Amount				Total estimated fair value
	1 year or less	Over 1–5 years	Over 5 years	Total	
Derivatives not designated as accounting hedges					
Interest rate contracts					
Futures – long	$ 17	$ 8	$ –	$ 25	$ –
Futures – short	43	9	–	52	–
Swaps	312	343	1,783	2,438	78
Options purchased	46	202	59	307	50
	418	562	1,842	2,822	128
Foreign exchange contracts					
Forward contracts	955	–	–	955	7
Cross-currency swaps	338	2,004	8,286	10,628	(930)
	1,293	2,004	8,286	11,583	(923)
Other derivative contracts					
Equity contracts	70	–	–	70	(1)
Futures – long	13	–	–	13	–
Futures – short	626	–	–	626	(1)
Other forward contracts	93	–	–	93	–
	802	–	–	802	(2)
Cash flow hedges					
Interest rate contracts					
Swaps	–	–	407	407	10
Foreign exchange contracts					
Cross-currency swaps	500	–	–	500	(123)
Net investment hedges					
Foreign exchange forward contracts	–	475	–	475	(42)
Total	$ 3,013	$ 3,041	$ 10,535	$ 16,589	$ (952)

Futures contracts included in the above are exchange traded contracts; all other contracts are over-the-counter.

(c) ***Interest Rate Contracts***

Interest rate swaps, futures and options are used as part of a portfolio of assets to manage interest rate risk associated with investment activities and insurance and investment contract liabilities. Interest-rate swap agreements require the periodic exchange of payments without the exchange of the notional principal amount on which payments are based. Call options grant the Company the right to enter into a swap with predetermined fixed-rate payments over a predetermined time period on the exercise date. Call options are used to manage the variability in future interest payments due to a change in credited interest rates and the related potential change in cash flows due to surrenders. Call options are also used to hedge minimum rate guarantees.

Foreign Exchange Contracts

Cross-currency swaps are used in combination with other investments to manage foreign currency risk associated with investment activities, and insurance and investment contract liabilities. Under these swaps principal amounts and fixed or floating interest payments may be exchanged in different currencies. The Company also enters into certain foreign exchange forward contracts to hedge certain product liabilities.

There was no ineffective portion of cash flow hedges during 2018. The maximum time frame for which variable cash flows are hedged is 50 years.

Other Derivative Contracts

Equity index swaps, futures and options are used to hedge certain product liabilities. Equity index swaps are also used as substitutes for cash instruments and are used to periodically hedge the market risk associated with certain fee income. Equity put options are used to manage potential credit risk impact of significant declines in certain equity markets.

30. Legal Provisions and Contingent Liabilities

The Company and its subsidiaries are from time-to-time subject to legal actions, including arbitrations and class actions, arising in the normal course of business. Provisions are established if, in management's judgment, it is probable a payment will be required and the amount of the payment can be reliably estimated. It is inherently difficult to predict the outcome of any of these proceedings with certainty, and it is possible that an adverse resolution could have a material adverse effect on the consolidated financial position of the Company. However, based on information presently known, it is not expected that any of the existing legal actions, either individually or in the aggregate, will have a material adverse effect on the consolidated financial position of the Company. Actual results could differ from management's best estimates.

A subsidiary of the Company in the United States is a defendant in an action in relation to its role as collateral manager of a collateralized debt obligation brought by an institution involved in the collateralized debt obligation. On April 28, 2014, the matter was dismissed. On July 2, 2014, the complainant filed an appeal of the dismissal and on April 15, 2015 the United States Court of Appeals for the Second Circuit issued its decision overturning the dismissal of the action and remanding the matter for further proceedings, which are ongoing. The resolution of this matter will not have a material adverse effect on the consolidated financial position of the Company.

Subsidiaries of the Company in the United States are defendants in legal actions, including class actions, relating to the administration of their staff retirement plans, or to the costs and features of certain of their retirement or fund products. Management believes the claims are without merit and will be aggressively defending these actions. Based on the information presently known these actions will not have a material adverse effect on the consolidated financial position of the Company.

A subsidiary of the Company, as reinsurer, is involved in an arbitration relating to the interpretation of certain provisions of a reinsurance treaty and the alleged underreporting of claims and overpayment of premium. Based on information presently known, it is difficult to predict the outcome of this matter with certainty, but this matter is not expected to have a material adverse effect on the consolidated financial position of the Company.

31. Commitments

(a) Letters of Credit

Letters of credit are written commitments provided by a bank. The total amount of letter of credit facilities is U.S. $2,127 of which U.S. $1,712 were issued as of December 31, 2018.

The Reinsurance operation periodically uses letters of credit as collateral under certain reinsurance contracts for on balance sheet policy liabilities.

(b) Investment Commitments

Commitments of investment transactions made in the normal course of operations in accordance with policies and guidelines that are to be disbursed upon fulfillment of certain contract conditions were $955 as at December 31, 2018, with $894 maturing within one year and $61 maturing within two years.

(c) Lease Obligations

The Company enters into operating leases for office space, land and certain equipment used in the normal course of operations. Lease payments are charged to operations over the period of use. The future minimum lease payments in aggregate and by year are as follows:

	2019	2020	2021	2022	2023	2024 and thereafter	Total
Future lease payments	$ 111	$ 98	$ 85	$ 76	$ 66	$ 464	$ 900

(d) Pledged Assets

In addition to the assets pledged by the Company disclosed elsewhere in the consolidated financial statements:

(i) The amount of assets included in the Company's balance sheet which have a security interest by way of pledging is $1,464 ($1,562 at December 31, 2017) in respect of reinsurance agreements.

In addition, under certain reinsurance contracts, bonds presented in portfolio investments are held in trust and escrow accounts. Assets are placed in these accounts pursuant to the requirements of certain legal and contractual obligations to support contract liabilities assumed.

(ii) The Company has pledged, in the normal course of business, $76 ($66 at December 31, 2017) of assets of the Company for the purpose of providing collateral for the counterparty.

32. Segmented Information

The operating segments of the Company are Canada, United States, Europe and Lifeco Corporate. These segments reflect the Company's management structure and internal financial reporting and are aligned to its geographic operations. Each of these segments operates in the financial services industry and the revenues from these segments are derived principally from interests in life insurance, health insurance, retirement and investment services, asset management and reinsurance businesses. Business activities that are not associated with the specific geographic operations are attributed to the Lifeco Corporate segment.

Transactions between operating segments occur at market terms and conditions and have been eliminated upon consolidation.

The Company has a capital allocation model to measure the performance of the operating segments. The impact of the capital allocation model is included in the segmented information presented below.

(a) Consolidated Net Earnings

	2018				
	Canada	United States	Europe	Lifeco Corporate	Total
Income					
Total net premiums	$ 13,093	$ 4,250	$ 18,118	$ –	$ 35,461
Net investment income					
Regular net investment income	2,608	1,836	1,901	13	6,358
Changes in fair value through profit or loss	(1,285)	(890)	(1,431)	–	(3,606)
Total net investment income	1,323	946	470	13	2,752
Fee and other income	1,736	2,603	1,480	–	5,819
	16,152	7,799	20,068	13	44,032
Benefits and expenses					
Paid or credited to policyholders	11,024	4,447	16,597	–	32,068
Other (1)	3,406	2,741	1,832	23	8,002
Financing charges	128	55	37	1	221
Amortization of finite life intangible assets and impairment reversal	81	90	41	–	212
Restructuring expenses	–	–	67	–	67
Loss on assets held for sale	–	–	–	–	–
Earnings (loss) before income taxes	1,513	466	1,494	(11)	3,462
Income taxes (recovery)	268	66	56	(3)	387
Net earnings (loss) before non-controlling interests	1,245	400	1,438	(8)	3,075
Non-controlling interests	(21)	2	–	–	(19)
Net earnings (loss)	1,266	398	1,438	(8)	3,094
Preferred share dividends	114	–	19	–	133
Net earnings (loss) before capital allocation	1,152	398	1,419	(8)	2,961
Impact of capital allocation	123	(10)	(108)	(5)	–
Net earnings (loss) – common shareholders	$ 1,275	$ 388	$ 1,311	$ (13)	$ 2,961

(1) Includes commissions, operating and administrative expenses and premium taxes.

	2017				
	Canada	United States	Europe	Lifeco Corporate	Total
	(note 2)	(note 2)			(note 2)
Income					
Total net premiums	$ 13,146	$ 4,471	$ 16,285	$ –	$ 33,902
Net investment income					
Regular net investment income	2,534	1,816	1,787	4	6,141
Changes in fair value through profit or loss	806	339	321	–	1,466
Total net investment income	3,340	2,155	2,108	4	7,607
Fee and other income	1,684	2,538	1,386	–	5,608
	18,170	9,164	19,779	4	47,117
Benefits and expenses					
Paid or credited to policyholders	12,977	5,814	16,852	–	35,643
Other (1)	3,433	2,737	1,623	22	7,815
Financing charges	123	128	48	1	300
Amortization of finite life intangible assets and impairment reversal	72	65	31	–	168
Restructuring expenses	215	17	27	–	259
Loss on assets held for sale	–	202	–	–	202
Earnings (loss) before income taxes	1,350	201	1,198	(19)	2,730
Income taxes (recovery)	231	243	(47)	(5)	422
Net earnings (loss) before non-controlling interests	1,119	(42)	1,245	(14)	2,308
Non-controlling interests	42	(10)	(2)	–	30
Net earnings (loss)	1,077	(32)	1,247	(14)	2,278
Preferred share dividends	104	–	19	6	129
Net earnings (loss) before capital allocation	973	(32)	1,228	(20)	2,149
Impact of capital allocation	101	(18)	(76)	(7)	–
Net earnings (loss) – common shareholders	$ 1,074	$ (50)	$ 1,152	$ (27)	$ 2,149

(1) Includes commissions, operating and administrative expenses and premium taxes.

32. Segmented Information (cont'd)

(b) Consolidated Total Assets and Liabilities

	2018			
	Canada	**United States**	**Europe**	**Total**
Assets				
Invested assets	**$ 75,647**	**$ 47,500**	**$ 54,334**	**$ 177,481**
Assets held for sale	**–**	**–**	**897**	**897**
Goodwill and intangible assets	**5,516**	**2,130**	**2,878**	**10,524**
Other assets	**3,110**	**4,495**	**18,336**	**25,941**
Investments on account of segregated fund policyholders	**76,633**	**31,816**	**101,078**	**209,527**
Investments on account of segregated fund policyholders held for sale	**–**	**–**	**3,319**	**3,319**
Total	**$ 160,906**	**$ 85,941**	**$ 180,842**	**$ 427,689**

	2018			
	Canada	**United States**	**Europe**	**Total**
Liabilities				
Insurance and investment contract liabilities	**$ 68,252**	**$ 42,912**	**$ 57,267**	**$ 168,431**
Liabilities held for sale	**–**	**–**	**897**	**897**
Other liabilities	**7,863**	**5,100**	**5,154**	**18,117**
Investment and insurance contracts on account of segregated fund policyholders	**76,633**	**31,816**	**101,078**	**209,527**
Investment and insurance contracts on account of segregated fund policyholders held for sale	**–**	**–**	**3,319**	**3,319**
Total	**$ 152,748**	**$ 79,828**	**$ 167,715**	**$ 400,291**

	2017			
	Canada	United States	Europe	Total
Assets				
Invested assets	$ 73,110	$ 44,263	$ 50,562	$ 167,935
Assets held for sale	–	169	–	169
Goodwill and intangible assets	5,447	1,975	2,489	9,911
Other assets	2,804	3,618	18,044	24,466
Investments on account of segregated fund policyholders	80,399	34,038	102,920	217,357
Total	$ 161,760	$ 84,063	$ 174,015	$ 419,838

	2017			
	Canada	United States	Europe	Total
Liabilities				
Insurance and investment contract liabilities	$ 66,460	$ 39,970	$ 54,935	$ 161,365
Other liabilities	7,254	4,505	3,821	15,580
Investment and insurance contracts on account of segregated fund policyholders	80,399	34,038	102,920	217,357
Total	$ 154,113	$ 78,513	$ 161,676	$ 394,302

33. Subsequent Event – U.S. Individual Life Insurance and Annuity Business Reinsurance Agreement

On January 24, 2019, Great-West Financial announced that it had entered into an agreement with Protective Life Insurance Company to sell, via indemnity reinsurance, substantially all of its individual life insurance and annuity business in its United States segment. The Company will continue to retain the cash flows arising from the contracts and the obligation to the contract holders and will recognize reinsurance assets from the agreement. In addition to recognition of reinsurance assets, the Company expects to recognize a loss in the Consolidated Statements of Earnings at the closing of this transaction. The transaction is in its initial stage, and is expected to close in the first half of 2019 subject to regulatory and customary closing conditions.

Independent Auditor’s Report

To the Shareholders of Great-West Lifeco Inc.

Opinion

We have audited the consolidated financial statements of Great-West Lifeco Inc. and its subsidiaries (the “Company”), which comprise the consolidated balance sheets as at December 31, 2018 and 2017, and the consolidated statements of earnings, comprehensive income, changes in equity and cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies (collectively referred to as the “financial statements”).

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as at December 31, 2018 and 2017, and its financial performance and its cash flows for the years then ended in accordance with International Financial Reporting Standards (“IFRS”).

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards (“Canadian GAAS”). Our responsibilities under those standards are further described in the *Auditor’s Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

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

- Management’s Discussion and Analysis
- The information, other than the financial statements and our auditor’s report thereon, in the Annual Report.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon. In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

We obtained Management’s Discussion and Analysis prior to the date of this auditor’s report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in this auditor’s report. We have nothing to report in this regard.

The Annual Report is expected to be made available to us after the date of the auditor’s report. If, based on the work we will perform on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact to those charged with governance.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

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

Those charged with governance are responsible for overseeing the Company’s financial reporting process.

Auditor’s Responsibilities for the Audit of the Financial Statements

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

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

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

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

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

The engagement partner on the audit resulting in this independent auditor's report is Paul Stauch.

/s/ **Deloitte LLP**

Chartered Professional Accountants

Winnipeg, Manitoba
February 7, 2019

Sources of Earnings

The following is provided in accordance with the OSFI guideline requiring Sources of Earnings (SOE) disclosure. SOE is not an International Financial Reporting Standards (IFRS) measure. There is no standard SOE methodology. The calculation of SOE is dependent on and sensitive to the methodology, estimates and assumptions used.

SOE identifies various sources of IFRS net earnings. It provides an analysis of the difference between actual net income and expected net income based on assumptions made at the beginning of the reporting period. The terminology used in the discussion of sources of earnings is described below:

Expected Profit on In-Force Business

This component represents the portion of the consolidated net income on business in-force at the start of the reporting period that was expected to be realized based on the achievement of the best-estimate assumptions. It includes releases of provisions for adverse deviations, expected net earnings on deposits, and expected net management fees.

Impact of New Business

This component represents the point-of-sale impact on net income of writing new business during the reporting period. This is the difference between the premium received and the sum of the expenses incurred as a result of the sale and the new liabilities established at the point of sale.

Experience Gains and Losses

This component represents gains and losses that are due to differences between the actual experience during the reporting period and the best-estimate assumptions at the start of the reporting period.

Management Actions and Changes in Assumptions

This component represents the impact on net income resulting from management actions, changes in actuarial assumptions or methodology, changes in margins for adverse deviations, and correction of errors.

Other

This component represents the amounts not included in any other line of the sources of earnings. In 2017, the impact of U.S. tax reform has been separated out in the presentation.

Earnings on Surplus

This component represents the earnings on the Company's surplus funds.

Great-West Lifeco's sources of earnings are shown below for 2018 and 2017.

Sources of Earnings

(in Canadian $ millions)

	Shareholders net earnings				
For the year ended December 31, 2018	Canada	United States	Europe	Lifeco Corporate	Total
Expected profit on in-force business	$ 1,219	$ 500	$ 1,215	$ (17)	$ 2,917
Impact of new business	8	(129)	(74)	–	(195)
Experience gains and losses	212	(29)	(73)	(7)	103
Management actions and changes in assumptions	208	56	453	–	717
Other	–	(9)	(67)	–	(76)
Earnings on surplus	84	66	(68)	8	90
Net earnings before tax	1,731	455	1,386	(16)	3,556
Taxes	(342)	(66)	(56)	3	(461)
Net earnings before non-controlling interests	1,389	389	1,330	(13)	3,095
Non-controlling interests	–	(1)	–	–	(1)
Net earnings – shareholders	1,389	388	1,330	(13)	3,094
Preferred share dividends	(114)	–	(19)	–	(133)
Net earnings – common shareholders	$ 1,275	$ 388	$ 1,311	$ (13)	$ 2,961

Sources of Earnings

(in Canadian $ millions)

	Shareholders net earnings				
For the year ended December 31, 2017	Canada	United States	Europe	Lifeco Corporate	Total
Expected profit on in-force business	$ 1,141	$ 487	$ 1,059	$ (15)	$ 2,672
Impact of new business	56	(128)	(43)	–	(115)
Experience gains and losses	336	50	(38)	(7)	341
Management actions and changes in assumptions	57	54	248	–	359
Impact of U.S. tax reform on insurance contract liabilities and expenses	–	(72)	(47)	–	(119)
Other	(172)	(203)	(27)	–	(402)
Earnings on surplus	33	(5)	(28)	(4)	(4)
Net earnings before tax	1,451	183	1,124	(26)	2,732
Taxes (excluding impact of U.S. tax reform)	(254)	(45)	(54)	5	(348)
U.S. tax reform impact on deferred tax balances	(19)	(223)	88	–	(154)
Tax recovery on impact of U.S. tax reform on insurance contract liabilities and expenses	–	25	13	–	38
Net earnings before non-controlling interests	1,178	(60)	1,171	(21)	2,268
Non-controlling interests	–	(9)	–	–	(9)
Impact of U.S. tax reform on non-controlling interests	–	19	–	–	19
Net earnings – shareholders	1,178	(50)	1,171	(21)	2,278
Preferred share dividends	(104)	–	(19)	(6)	(129)
Net earnings – common shareholders	$ 1,074	$ (50)	$ 1,152	$ (27)	$ 2,149

Analysis of Results

Expected profit on in-force business is the major driver of earnings and accounted for 82% of pre-tax earnings in 2018. The expected profit on in-force business of $2,917 in 2018 was $245 higher than 2017. The increase year-over-year is primarily a result of higher expected margins for group business in Canada, business growth in all segments and the impact of currency changes.

The strain on new sales of $195 in 2018 was $80 higher than 2017 primarily due to higher strain in Canada in 2018 and gains in 2017 on new longevity swaps and annuity business written in Europe.

Experience gains of $103 in 2018 were $238 lower than 2017. The gains in 2018 were primarily a result of investment experience (including yield enhancements) in Canada and the U.S. and morbidity results in Canada and Europe. These gains were partially offset by unfavorable expense/fee-based experience and policyholder behaviour results in all regions. The gains in 2017 were primarily a result of investment experience (including yield enhancements) in all segments, higher fees and lower expenses in the U.S. and Canada, and mortality and longevity results in Europe. These gains were partially offset by property catastrophe reinsurance results in Europe and policyholder behaviour results in Canada.

Management actions and changes in assumptions contributed $717 to pre-tax earnings in 2018 compared to $359 in 2017. The assumption changes and management actions were $208 in Canada, $56 in the U.S. and $453 in Europe.

The most significant contributors to the Canada amount of $208 were updated economic assumptions and updated morbidity assumptions. These gains were partially offset by updated policyholder behaviour assumptions and updated life mortality assumptions.

The most significant contributors to the U.S. amount of $56 were updated policyholder behavior assumptions, updated life mortality assumptions and updated longevity assumptions. These gains were partially offset by modelling refinements and updated economic assumptions.

The most significant contributors to the Europe amount of $453 were updated longevity assumptions, updated life mortality assumptions, modeling refinements, updated economic assumptions and updated morbidity assumptions. These gains were partially offset by updated policyholder behaviour assumptions.

Other of $(76) in 2018 is primarily due to restructuring costs in the U.K.

Earnings on surplus of $90 in 2018 was $94 higher than 2017 primarily due to a gain arising from a debt refinancing in the U.S. and higher other investment income across all regions. These gains were partially offset by lower gains on seed capital and lower other gains in the U.S.

Five-Year Summary

(in Canadian $ millions except per share amounts)

At December 31	**2018**	2017	2016	2015	2014
Total assets under administration	**$1,398,873**	$1,349,913	$1,248,239	$1,212,517	$1,063,333
For the Year Ended December 31					
Premiums and deposits:					
Net premium income					
(Life insurance, guaranteed annuities and insured health products) (1)	**$ 35,461**	$ 33,902	$ 31,125	$ 24,501	$ 21,222
Self-funded premium equivalents (Administrative services only contracts)	**3,068**	2,827	2,751	2,625	2,603
Segregated funds deposits:					
Individual products	**16,668**	17,037	13,512	12,983	11,826
Group products	**7,807**	7,848	7,846	8,609	9,083
Proprietary mutual funds and institutional deposits	**76,258**	61,490	62,232	56,257	45,306
Total premiums and deposits	**$ 139,262**	$ 123,104	$ 117,466	$ 104,975	$ 90,040
Condensed Statements of Earnings					
Income					
Total net premiums (1)	**$ 35,461**	$ 33,902	$ 31,125	$ 24,501	$ 21,222
Net investment income					
Regular net investment income	**6,358**	6,141	6,252	6,271	6,010
Changes in fair value through profit or loss	**(3,606)**	1,466	3,903	(2,010)	7,527
Total net investment income	**2,752**	7,607	10,155	4,261	13,537
Fee and other income (1)	**5,819**	5,608	5,101	5,058	4,422
Total income	**44,032**	47,117	46,381	33,820	39,181
Benefits and expenses					
Paid or credited to policyholders	**32,068**	35,643	34,675	22,842	29,160
Other (1)	**8,223**	8,115	8,114	7,326	6,468
Amortization of finite life intangible assets and impairment reversal	**212**	168	177	146	132
Restructuring expenses	**67**	259	63	35	32
Loss on assets held for sale	**–**	202	–	–	–
Earnings before income taxes	**3,462**	2,730	3,352	3,471	3,389
Income taxes	**387**	422	396	460	628
Net earnings before non-controlling interests	**3,075**	2,308	2,956	3,011	2,761
Non-controlling interests	**(19)**	30	192	123	93
Net earnings – shareholders	**3,094**	2,278	2,764	2,888	2,668
Preferred share dividends	**133**	129	123	126	122
Net earnings – common shareholders	**$ 2,961**	$ 2,149	$ 2,641	$ 2,762	$ 2,546
Earnings per common share	**$ 2.996**	$ 2.173	$ 2.668	$ 2.774	$ 2.549
Return on common shareholders' equity	**14.0%**	10.9%	13.8%	14.7%	15.7%
Book value per common share	**$ 22.08**	$ 20.11	$ 19.76	$ 20.06	$ 16.80
Dividends to common shareholders – per share	**$ 1.556**	$ 1.468	$ 1.384	$ 1.304	$ 1.230

(1) Comparative figures for 2017 have been reclassified as described in note 2 to the Company's December 31, 2018 consolidated financial statements.

Directors and Senior Officers

Board of Directors

R. Jeffrey Orr [3, 4, 5, 6, 7]
Chair of the Board of Lifeco
President and Chief Executive Officer,
Power Financial Corporation

Michael R. Amend [3, 6, 7]
President, Online,
Lowe's Companies, Inc.

Deborah J. Barrett, CPA, CA, ICD.D [1, 3, 7]
Corporate Director

Marcel R. Coutu [3, 4, 5, 6, 7]
Corporate Director

André Desmarais, O.C., O.Q. [3, 4, 5, 6, 7]
Deputy Chairman, President and
Co-Chief Executive Officer,
Power Corporation of Canada
Executive Co-Chairman,
Power Financial Corporation

Paul Desmarais, Jr., O.C., O.Q. [3, 4, 5, 6, 7]
Chairman and Co-Chief Executive Officer,
Power Corporation of Canada
Executive Co-Chairman,
Power Financial Corporation

Gary A. Doer, O.M. [3, 6, 7]
Senior Business Advisor,
Dentons Canada LLP

David G. Fuller [3, 6, 7]
Corporate Director

Claude Généreux [3, 5, 6, 7]
Executive Vice-President,
Power Corporation of Canada
and Power Financial Corporation

Chaviva M. Hošek, O.C., Ph.D., LL.D. [1, 2]
Corporate Director

J. David A. Jackson, LL.B. [3, 4, 5, 6, 7]
Senior Counsel,
Blake, Cassels & Graydon LLP

Elizabeth C. Lempres [1, 3, 6, 7]
Corporate Director

Paula B. Madoff [3, 6, 7]
Corporate Director

Paul A. Mahon [3, 6]
President and Chief Executive Officer
of Lifeco,
The Great-West Life Assurance Company,
London Life Insurance Company,
Canada Life Financial Corporation,
The Canada Life Assurance Company

Susan J. McArthur [3, 5, 6, 7]
Managing Partner,
GreenSoil Investments

Donald M. Raymond, Ph.D., CFA [3, 6, 7]
Managing Partner and Chief Investment Officer,
Alignvest Management Corporation and Alignvest
Investment Management Corporation

T. Timothy Ryan [3, 4, 5, 6, 7]
Corporate Director

Jerome J. Selitto [2, 3, 6, 7]
President,
Better Mortgage Corporation

James M. Singh, CPA, CMA, FCMA(UK) [1, 2, 3, 6, 7]
Executive Chairman,
CSM Bakery Solutions Limited

Gregory D. Tretiak, FCPA, FCA [3, 6, 7]
Executive Vice-President and
Chief Financial Officer,
Power Corporation of Canada and
Power Financial Corporation

Siim A. Vanaselja, FCPA, FCA [1, 3, 6, 7]
Corporate Director

Brian E. Walsh [3, 4, 5, 6, 7]
Principal and Chief Strategist,
Titan Advisors LLC

Committees

1. **Audit Committee**
   Chair: Siim A. Vanaselja
2. **Conduct Review Committee**
   Chair: Chaviva M. Hošek
3. **Executive Committee**
   Chair: R. Jeffrey Orr
4. **Governance and Nominating Committee**
   Chair: R. Jeffrey Orr
5. **Human Resources Committee**
   Chair: Claude Généreux
6. **Investment Committee**
   Chair: Donald M. Raymond
7. **Risk Committee**
   Chair: Gregory D. Tretiak

Senior Officers

Paul A. Mahon
President and Chief Executive Officer

Arshil Jamal
President and Chief Operating Officer,
Europe

Jeffrey F. Macoun
President and Chief Operating Officer,
Canada

Robert L. Reynolds
Chair,
Great-West Lifeco U.S. LLC

Philip Armstrong
Executive Vice-President and
Global Chief Information Officer

Graham R. Bird
Executive Vice-President and
Chief Risk Officer

Sharon C. Geraghty
Executive Vice-President and
General Counsel

Garry MacNicholas
Executive Vice-President and
Chief Financial Officer

Grace M. Palombo
Executive Vice-President and
Chief Human Resources Officer

Ross J. Petersmeyer
Senior Vice-President,
Regulatory Affairs

Nancy D. Russell
Senior Vice-President and
Chief Internal Auditor

Anne C. Sonnen
Senior Vice-President and
Chief Compliance Officer

Raman Srivastava
Executive Vice-President and
Global Chief Investment Officer

Dervla M. Tomlin
Executive Vice-President and
Chief Actuary

Jeremy W. Trickett
Senior Vice-President,
Corporate Secretary and
Chief Governance Officer

Shareholder Information

Registered Office

100 Osborne Street North
Winnipeg, Manitoba, Canada R3C 1V3
Phone: 204-946-1190
Website: greatwestlifeco.com

Stock Exchange Listings

Great-West Lifeco Inc. trades on the Toronto Stock Exchange (TSX) under the ticker symbol GWO.

The following shares are listed on the Toronto Stock Exchange: Common Shares (**GWO**); Non-Cumulative First Preferred Shares Series F (**GWO.PR.F**), Series G (**GWO.PR.G**), Series H (**GWO.PR.H**), Series I (**GWO.PR.I**), Series L (**GWO.PR.L**), Series M (**GWO.PR.M**), Series N (**GWO.PR.N**), Series O (**GWO.PR.O**), Series P (**GWO.PR.P**), Series Q (**GWO.PR.Q**), Series R (**GWO.PR.R**), Series S (**GWO.PR.S**) and Series T (**GWO.PR.T**).

Shareholder Services

For information or assistance regarding your registered share account, including dividends, changes of address or ownership, share certificates, direct registration, to eliminate duplicate mailings or to receive shareholder material electronically, please contact our transfer agent in Canada, the United States, United Kingdom or in Ireland directly. If you hold your shares through a broker, please contact your broker directly.

Transfer Agent and Registrar

The transfer agent and registrar of Great-West Lifeco Inc. is **Computershare Investor Services Inc.**

In Canada, the Common Shares and Non-Cumulative First Preferred Shares, Series F are transferable at the following locations:

Canadian Offices	Computershare Investor Services Inc.
	Phone: 1-888-284-9137 (toll free in Canada and the United States), 514-982-9557 (direct dial)
	100 University Avenue, 8th Floor, Toronto, Ontario M5J 2Y1
	600, 530 8th Avenue S.W., Calgary, Alberta T2P 3S8
	1500 Robert-Bourassa Boulevard, 7th Floor, Montréal, Québec H3A 3S8
	2nd Floor, 510 Burrard Street, Vancouver, British Columbia V6C 3B9

The Non-Cumulative First Preferred Shares, Series G, H, I, L, M, N, O, P, Q, R, S and T are only transferable at the Toronto office of Computershare Investor Services Inc.

Internationally, the Common Shares and Non-Cumulative First Preferred Shares, Series F are also transferable at the following locations:

United States Offices	Computershare Trust Company, N.A.
	Phone: 1-888-284-9137 (toll free in Canada and the United States)
	250 Royall Street, Canton MA 02021
	480 Washington Boulevard, Jersey City NJ 07310
	462 South 4th Street, Louisville KY 40202
United Kingdom Office	Computershare Investor Services PLC
	Phone: 0370 702 0003
	The Pavilions, Bridgwater Road, Bristol BS99 6ZZ
Ireland Office	Computershare Investor Services (Ireland) Limited
	Phone: 216 3100
	Heron House, Corrig Road, Sandyford Industrial Estate, Dublin 18

Shareholders wishing to contact the transfer agent by email can do so at GWO@computershare.com.

Dividends

Common Shares and First Preferred Shares Series F, G, H, I, L, M, N, O, P, Q, R, S and T – Dividend record dates are usually between the 1st and 3rd of March, June, September and December. Dividends are usually paid the last business day of each quarter.

Investor Information

Financial analysts, portfolio managers and other investors requiring information may contact Investor Relations by calling 416-552-3208 or emailing investorrelations@gwl.ca. Financial information may also be accessed at greatwestlifeco.com.

For copies of our annual or quarterly reports, visit greatwestlifeco.com or contact the Corporate Secretary's Office at corporate.secretary@gwl.ca.

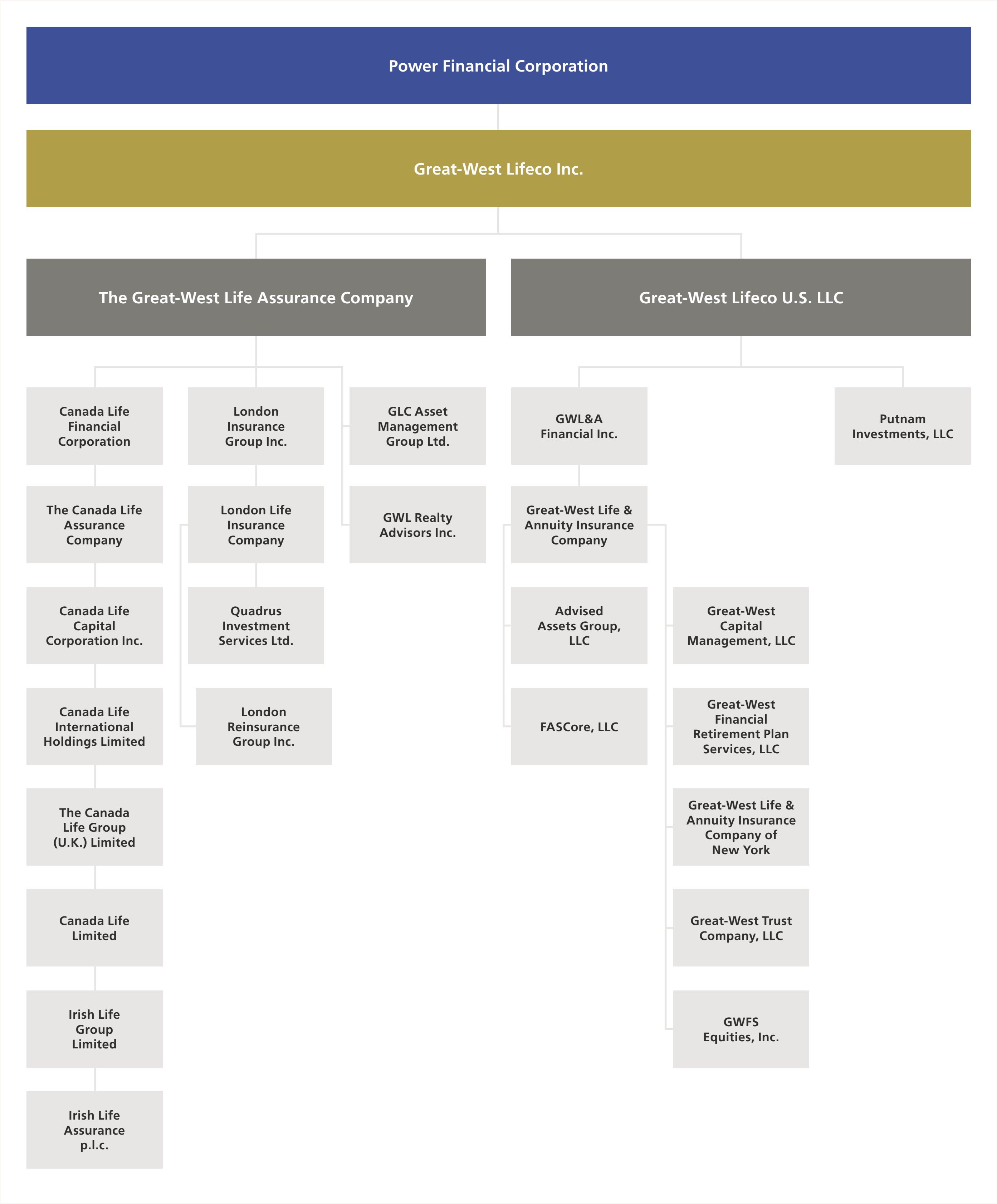
Common Share Investment Data

	Market price per common share ($)			Dividends	Dividend	Dividend
	High	Low	Close	paid ($)	payout ratio [1,2]	yield [2]
2018	**35.51**	**27.10**	**28.18**	**1.556**	**51.9%**	**5.0%**
2017	37.74	33.32	35.10	1.468	67.6%	4.1%
2016	37.03	31.01	35.17	1.384	51.9%	4.1%
2015	37.52	31.31	34.53	1.304	47.0%	3.8%
2014	33.87	28.95	33.59	1.23	48.3%	3.9%

1 Ratio based on IFRS net earnings

2 Dividends as a percent of average high and low market price for the reporting period

ORGANIZATION CHART



This chart depicts the corporate relationships among Great-West Lifeco Inc. and certain of its subsidiaries as of December 31, 2018. Great-West Lifeco beneficially owns, directly or indirectly, 100% of the voting securities of each such subsidiary. Power Financial Corporation controlled, directly or indirectly, 71.81% of the outstanding Common Shares of Great-West Lifeco, representing approximately 65% of the voting rights attached to all of the outstanding voting shares of Great-West Lifeco as of December 31, 2018.

GREAT-WEST
LIFECO INC.

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greatwestlifeco.com

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