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

FORM 40-F

(Check One)

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

OR

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

For the fiscal year ended December 31, 2016 **Commission file number 1-14942**

MANULIFE FINANCIAL CORPORATION

(Exact name of Registrant as specified in its charter)

Canada
(Province or other jurisdiction of incorporation or organization)

6311
(Primary Standard Industrial Classification Code Number (if applicable))

Not applicable
(I.R.S. Employer Identification Number (if applicable))

200 Bloor Street East, NT 11, Toronto, Ontario, Canada M4W 1E5
(416) 926-3000
(Address and Telephone Number of Registrant's Principal Executive Offices)

James Gallagher, Manulife Financial Corporation, 601 Congress Street, Boston, MA 02210-2805 (617) 663-3000
(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

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

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

Securities registered or to be registered pursuant to Section 12(g) of the Act. None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act. 4.90% Senior Notes due 2020, 4.150% Senior Notes due 2026, and 5.375% Senior Notes due 2046

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

☒ **Annual Information Form** ☒ **Audited Annual Financial Statements**

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

Common Shares	**1,975,454,900**
Class A Shares Series 2	**14,000,000**
Class A Shares Series 3	**12,000,000**
Class 1 Shares Series 3	**6,335,831**
Class 1 Shares Series 4	**1,664,169**
Class 1 Shares Series 5	**8,000,000**
Class 1 Shares Series 7	**10,000,000**
Class 1 Shares Series 9	**10,000,000**
Class 1 Shares Series 11	**8,000,000**
Class 1 Shares Series 13	**8,000,000**
Class 1 Shares Series 15	**8,000,000**
Class 1 Shares Series 17	**14,000,000**
Class 1 Shares Series 19	**10,000,000**
Class 1 Shares Series 21	**17,000,000**
Class 1 Shares Series 23	**19,000,000**

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

Yes ☒ No ☐

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

Yes ☐ **No** ☒

Principal Documents

The following documents, filed as exhibits 99.1, 99.2 and 99.3 hereto, are hereby incorporated by reference into this Annual Report:

(a) Consolidated Financial Statements for the fiscal year ended December 31, 2016;

(b) Management's Discussion and Analysis for the fiscal year ended December 31, 2016; and

(c) Annual Information Form dated February 9, 2017 for the fiscal year ended December 31, 2016.

Certifications and Disclosure Regarding Controls and Procedures.

(a) Certifications. The Certificates required by Rule 13a-14(a) and (b) are set forth in Exhibits 99.4, 99.5, 99.6 and 99.7 to this Annual Report on Form 40-F.

(b) Disclosure Controls and Procedures. The conclusions of Manulife's principal executive and principal financial officers regarding the effectiveness of Manulife's disclosure controls and procedures as at December 31, 2016 are set forth under the heading "Controls and Procedures – Disclosure Controls and Procedures" in the Company's Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

(c) Management's Annual Report on Internal Control over Financial Reporting. Management's report on Manulife's internal control over financial reporting is set forth under the heading "Controls and Procedures - Management's Report on Internal Control over Financial Reporting" in the Company's Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

(d) Attestation Report of the Registered Public Accounting Firm. Ernst & Young LLP's attestation report on management's assessment of internal control over financial reporting is set forth under the heading "Independent Auditors' Report of Registered Public Accounting Firm on Internal Control Under Standards of The Public Company Accounting Oversight Board (United States)" in the Company's Consolidated Financial Statements for the fiscal year ended December 31, 2016, filed as Exhibit 99.1 to this Annual Report on Form 40-F.

(e) Changes in Internal Control Over Financial Reporting. Information regarding any changes in Manulife's internal control over financial reporting is set forth under the heading "Controls and Procedures – Changes in Internal Control over Financial Reporting" in the Company's Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

Audit Committee Financial Expert.

Information regarding audit committee financial experts is set forth under the heading "Audit Committee" in the Company's Annual Information Form ("AIF") dated February 9, 2017 for the fiscal year ended December 31, 2016, filed as Exhibit 99.3 to this Annual Report on Form 40-F.

Code of Business Conduct and Ethics.

The Company has adopted a Code of Business Conduct and Ethics ("Code") that applies to all directors, officers and employees, and that qualifies as a "code of ethics" as that term is defined in Form 40-F. The Code is posted on the corporate governance section of our website and is available for viewing at: http://www.manulife.com/servlet/servlet.FileDownload?file=00P5000000a1MbpEAE

Since the adoption of the Code, there have been amendments to the Code to provide clarity and to expand on elements of the existing Code. There have not been any waivers, including implied waivers, from any provision of the Code.

Principal Accountant Fees and Services.

Information regarding the fees billed by Ernst & Young LLP is set forth under the heading "Audit Committee - External Auditor Service Fees" in the Company's Annual Information Form dated February 9, 2017 for the fiscal year ended December 31, 2016, filed as Exhibit 99.3 to this Annual Report on Form 40-F.

Pre-Approval Policies and Procedures.

Information regarding Manulife's pre-approval policies and procedures is set forth under the heading "Audit Committee – Pre-Approval Policies and Procedures" in the Company's Annual Information Form dated February 9, 2017 for the fiscal year ended December 31, 2016, filed as Exhibit 99.3 to this Annual Report on Form 40-F.

Off-Balance Sheet Arrangements.

Information regarding Manulife's off-balance sheet arrangements is set forth in the discussion of risk in the Company's Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 99.2 to this Annual Report on Form 40-F. The notes to the Consolidated Financial Statements for the fiscal year ended December 31, 2016, filed as Exhibit 99.1 to this Annual Report on Form 40-F include the following disclosures related to off-balance sheet arrangements:

Note 5	Derivative and Hedging Instruments
Note 10	Risk Management - Securities Lending, Repurchase and Reverse Repurchase Transactions
Note 17	Interests in Structured Entities
Note 18	Commitments and Contingencies

Tabular Disclosure of Contractual Obligations.

Information regarding Manulife's contractual obligations is set forth under the heading "Contractual Obligations" in the Company's Management's Discussion and Analysis for the fiscal year ended December 31, 2016, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

Identification of the Audit Committee.

Information regarding the Audit Committee of Manulife's Board of Directors is set forth under the heading "Audit Committee - Composition of the Audit Committee in 2016" in the Company's Annual Information Form ("AIF") dated February 9, 2017 for the fiscal year ended December 31, 2016, filed as Exhibit 99.3 to this Annual Report on Form 40-F.

Independence of Directors.

A majority of the directors and all members of the Board's standing committees must be independent so that the Board operates independently of management.

A director is independent if he or she does not have a direct or indirect relationship with the Company that could reasonably be expected to interfere with the director's ability to exercise independent judgment. The Company has established an independence policy for the Board which is consistent with applicable legal and regulatory requirements, including those established under Canadian and U.S. securities law, the *Insurance Companies Act (Canada)* and the rules of the New York Stock Exchange. The independence policy is available on our website (www.manulife.com).

Each year the Board, with the assistance of the Corporate Governance and Nominating Committee, reviews the independence of each director and has determined that 14 of the 15 directors are independent and that the members of the Audit Committee and the Management Resources and Compensation Committee meet the additional independence requirements for those committees. As CEO, Donald Guloien is not independent.

Presiding Director at Meetings of Non-Management Directors.

The independent directors meet regularly with senior executives and have an opportunity to meet privately without management present during the closed session held at each Board and committee meeting. They may also use these sessions to meet privately with members of management or independent advisors.

In addition, the independent directors meet at least once each year in a closed session without the CEO present to review the performance and approve the compensation of the CEO, to review the Board's effectiveness assessments and to approve the Board's objectives for the following year. In 2016, one such meeting of the independent directors was held which was presided over by the Chairman of the Board.

Communication with Non-Management Directors.

Shareholders wishing to contact non-management Directors of the Company may write to the Chairman of the Board, in care of the Corporate Secretary, at the head office of the Company, 200 Bloor Street East, Toronto, Ontario, Canada, M4W 1E5.

Corporate Governance Guidelines.

The Company's governance practices are consistent in all material respects with the requirements of the *Insurance Companies Act* (Canada), the corporate governance guidelines established by the Office of the Superintendent of Financial Institutions (Canada) and by the Canadian Securities Administrators, the New York Stock Exchange corporate governance rules for domestic issuers and the applicable U.S. Securities and Exchange Commission rules and regulations. The Company's statement of corporate governance practices is posted on the corporate governance section of our website and is available at: http://www.manulife.com/servlet/servlet.FileDownload?file=00P5000000dfNfsEAE#Page=96

Board Committee Charters.

The Board has established four standing committees to assist it in fulfilling its mandate: Corporate Governance and Nominating Committee, Audit Committee, Risk Committee, and Management Resources and Compensation Committee.

All of the members of the standing committees are independent. Each committee reviews and, as necessary, updates its charter every year and monitors compliance with its charter on a regular basis throughout the year. Each committee chair reports to the Board on the committee's deliberations and any recommendations that require Board approval.

The committee charters and the position description for each committee chair are posted on the corporate governance section of our website and are available at: http://www.manulife.com/Board-of-Committees

UNDERTAKING AND CONSENT TO SERVICE OF PROCESS

A. Undertaking.

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

B. Consent to Service of Process.

The Company has previously filed a Form F-X in connection with the class of securities in relation to which the obligation to file this Annual Report arises.

Any change to the name or address of the Registrant's agent for service of process shall be communicated promptly to the Securities and Exchange Commission by an amendment to the Form F-X referencing the file number of the relevant registration statement of the Registrant.

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this Annual Report to be signed on its behalf by the undersigned, thereto duly authorized, on February 9, 2017.

Manulife Financial Corporation

By: */s/ James D. Gallagher*
Name: James D. Gallagher
Title: Executive Vice President and General Counsel

EXHIBIT INDEX

Exhibit	Description
99.1	Consolidated Financial Statements for the fiscal year ended December 31, 2016
99.2	Management's Discussion and Analysis for the fiscal year ended December 31, 2016
99.3	Annual Information Form dated February 9, 2017 for the fiscal year ended December 31, 2016
99.4	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934
99.5	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934
99.6	Section 1350 Certification of Chief Executive Officer
99.7	Section 1350 Certification of Chief Financial Officer
99.8	Consent of Independent Registered Public Accounting Firm
99.9	Consent of Appointed Actuary

Exhibit 99.1



Manulife Financial Corporation
Consolidated Financial Statements

For the year ended December 31, 2016

Responsibility for Financial Reporting

The accompanying consolidated financial statements of Manulife Financial Corporation are the responsibility of management and have been approved by the Board of Directors. It is also the responsibility of management to ensure that all information in the annual report to shareholders is consistent with these consolidated financial statements.

The consolidated financial statements have been prepared by management in accordance with International Financial Reporting Standards and the accounting requirements of the Office of the Superintendent of Financial Institutions, Canada. When alternative accounting methods exist, or when estimates and judgment are required, management has selected those amounts that present the Company's financial position and results of operations in a manner most appropriate to the circumstances.

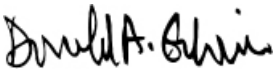
Appropriate systems of internal control, policies and procedures have been maintained to ensure that financial information is both relevant and reliable. The systems of internal control are assessed on an ongoing basis by management and the Company's internal audit department.

The actuary appointed by the Board of Directors (the "Appointed Actuary") is responsible for ensuring that assumptions and methods used in the determination of policy liabilities are appropriate to the circumstances and that reserves will be adequate to meet the Company's future obligations under insurance and annuity contracts.

The Board of Directors is responsible for ensuring that management fulfills its responsibility for financial reporting and is ultimately responsible for reviewing and approving the consolidated financial statements. These responsibilities are carried out primarily through an Audit Committee of unrelated and independent directors appointed by the Board of Directors.

The Audit Committee meets periodically with management, the internal auditors, the external auditors and the Appointed Actuary to discuss internal control over the financial reporting process, auditing matters and financial reporting issues. The Audit Committee reviews the consolidated financial statements prepared by management and then recommends them to the Board of Directors for approval. The Audit Committee also recommends to the Board of Directors and shareholders the appointment of external auditors and approval of their fees.

The consolidated financial statements have been audited by the Company's external auditors, Ernst & Young LLP, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States). Ernst & Young LLP has full and free access to management and the Audit Committee.



Donald A. Guloien
President and Chief Executive Officer



Steve B. Roder
Senior Executive Vice President and Chief Financial Officer

Toronto, Canada

February 9, 2017

Appointed Actuary's Report to the Shareholders

I have valued the policy liabilities and reinsurance recoverables of Manulife Financial Corporation for its Consolidated Statements of Financial Position as at December 31, 2016 and 2015 and their change in the Consolidated Statements of Income for the years then ended in accordance with actuarial practice generally accepted in Canada, including selection of appropriate assumptions and methods.

In my opinion, the amount of policy liabilities net of reinsurance recoverables makes appropriate provision for all policyholder obligations and the consolidated financial statements fairly present the results of the valuation.



Mr. Steven A. Finch
Executive Vice President and Appointed Actuary

Toronto, Canada

February 9, 2017

Independent Auditors' Report of Registered Public Accounting Firm

To the Shareholders of Manulife Financial Corporation

We have audited the accompanying consolidated financial statements of Manulife Financial Corporation, which comprise the Consolidated Statements of Financial Position as at December 31, 2016 and 2015, and the Consolidated Statements of Income, Comprehensive Income, Changes in Equity and Cash Flows for the years then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements, evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of Manulife Financial Corporation as at December 31, 2016 and 2015, and its financial performance and its cash flows for the years then ended in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Other Matter

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Manulife Financial Corporation's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 9, 2017 expressed an unqualified opinion on Manulife Financial Corporation's internal control over financial reporting.



Chartered Professional Accountants
Licensed Public Accountants

Toronto, Canada

February 9, 2017

Independent Auditors' Report of Registered Public Accounting Firm on Internal Control Under Standards of The Public Company Accounting Oversight Board (United States)

To the Shareholders of Manulife Financial Corporation

We have audited Manulife Financial Corporation's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Manulife Financial Corporation's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in Management's Report on Internal Control Over Financial Reporting contained in the Management's Discussion and Analysis. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

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

In our opinion, Manulife Financial Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States), the Consolidated Statements of Financial Position as at December 31, 2016 and 2015, and the Consolidated Statements of Income, Comprehensive Income, Changes in Equity and Cash Flows for the years then ended of Manulife Financial Corporation, and our report dated February 9, 2017, expressed an unqualified opinion thereon.



Chartered Professional Accountants
Licensed Public Accountants

Toronto, Canada
February 9, 2017

Consolidated Statements of Financial Position

As at December 31, (Canadian $ in millions)	2016	2015
Assets		
Cash and short-term securities	**$ 15,151**	$ 17,885
Debt securities	**168,622**	157,827
Public equities	**19,496**	16,983
Mortgages	**44,193**	43,818
Private placements	**29,729**	27,578
Policy loans	**6,041**	5,912
Loans to bank clients	**1,745**	1,778
Real estate	**14,132**	15,347
Other invested assets	**22,760**	20,378
Total invested assets (note 4)	**321,869**	307,506
Other assets		
Accrued investment income	**2,260**	2,264
Outstanding premiums	**845**	878
Derivatives (note 5)	**23,672**	24,272
Reinsurance assets (note 8)	**34,952**	35,426
Deferred tax assets (note 6)	**4,439**	4,067
Goodwill and intangible assets (note 7)	**10,107**	9,384
Miscellaneous	**7,360**	5,825
Total other assets	**83,635**	82,116
Segregated funds net assets (note 22)	**315,177**	313,249
Total assets	**$ 720,681**	$ 702,871
Liabilities and Equity		
Liabilities		
Insurance contract liabilities (note 8)	**$ 297,505**	$ 285,288
Investment contract liabilities (note 9)	**3,275**	3,497
Deposits from bank clients	**17,919**	18,114
Derivatives (note 5)	**14,151**	15,050
Deferred tax liabilities (note 6)	**1,359**	1,235
Other liabilities	**15,596**	14,952
	349,805	338,136
Long-term debt (note 11)	**5,696**	1,853
Capital instruments (note 12)	**7,180**	7,695
Segregated funds net liabilities (note 22)	**315,177**	313,249
Total liabilities	**677,858**	660,933
Equity		
Preferred shares (note 13)	**3,577**	2,693
Common shares (note 13)	**22,865**	22,799
Contributed surplus	**284**	277
Shareholders' retained earnings	**9,759**	8,398
Shareholders' accumulated other comprehensive income (loss):		
Pension and other post-employment plans	**(417)**	(521)
Available-for-sale securities	**(394)**	345
Cash flow hedges	**(232)**	(264)
Translation of foreign operations and real estate revaluation surplus	**6,390**	7,432
Total shareholders' equity	**41,832**	41,159
Participating policyholders' equity	**248**	187
Non-controlling interests	**743**	592
Total equity	**42,823**	41,938
Total liabilities and equity	**$ 720,681**	$ 702,871

The accompanying notes are an integral part of these Consolidated Financial Statements.



Donald A. Guloien
President and Chief Executive Officer



Richard B. DeWolfe
Chairman of the Board of Directors

Consolidated Statements of Income

For the years ended December 31, (Canadian $ in millions except per share amounts)	2016	2015
Revenue		
Premium income		
Gross premiums	**$ 36,659**	$ 32,020
Premiums ceded to reinsurers	**(9,027)**	(8,095)
Premiums ceded, net of commission and additional consideration relating to Closed Block reinsurance transaction (note 3)	**–**	(7,996)
Net premiums	**27,632**	15,929
Investment income (note 4)		
Investment income	**13,390**	11,465
Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on the macro hedge program	**1,134**	(3,062)
Net investment income	**14,524**	8,403
Other revenue	**11,181**	10,098
Total revenue	**53,337**	34,430
Contract benefits and expenses		
To contract holders and beneficiaries		
Gross claims and benefits (note 8)	**25,059**	23,761
Change in insurance contract liabilities	**18,014**	7,452
Change in investment contract liabilities	**–**	203
Benefits and expenses ceded to reinsurers	**(8,097)**	(7,265)
Change in reinsurance assets (note 8)	**(842)**	(6,810)
Net benefits and claims	**34,134**	17,341
General expenses	**6,995**	6,221
Investment expenses (note 4)	**1,646**	1,615
Commissions	**5,818**	5,176
Interest expense	**1,013**	1,101
Net premium taxes	**402**	358
Total contract benefits and expenses	**50,008**	31,812
Income before income taxes	**3,329**	2,618
Income tax expense (note 6)	**(196)**	(328)
Net income	**$ 3,133**	$ 2,290
Net income attributed to:		
Non-controlling interests	**$ 143**	$ 69
Participating policyholders	**61**	30
Shareholders	**2,929**	2,191
	$ 3,133	$ 2,290
Net income attributed to shareholders	**2,929**	2,191
Preferred share dividends	**(133)**	(116)
Common shareholders' net income	**$ 2,796**	$ 2,075
Earnings per share		
Basic earnings per common share (note 13)	**$ 1.42**	$ 1.06
Diluted earnings per common share (note 13)	**1.41**	1.05
Dividends per common share	**0.740**	0.665

The accompanying notes are an integral part of these Consolidated Financial Statements.

Consolidated Statements of Comprehensive Income

For the years ended December 31, (Canadian $ in millions)	2016	2015
Net income	**$ 3,133**	$ 2,290
Other comprehensive income ("OCI"), net of tax:		
Items that may be subsequently reclassified to net income:		
Foreign exchange gains (losses) on:		
Translation of foreign operations	**(1,044)**	5,450
Net investment hedges	**2**	(131)
Available-for-sale financial securities:		
Unrealized losses arising during the year	**(218)**	(165)
Reclassification of net realized gains and impairments to net income	**(523)**	(283)
Cash flow hedges:		
Unrealized gains (losses) arising during the year	**21**	(64)
Reclassification of realized losses to net income	**11**	11
Share of other comprehensive loss of associates	**–**	(3)
Total items that may be subsequently reclassified to net income	**(1,751)**	4,815
Items that will not be reclassified to net income:		
Change in pension and other post-employment plans	**104**	8
Real estate revaluation reserve	**–**	2
Total items that will not be reclassified to net income	**104**	10
Other comprehensive income (loss), net of tax	**(1,647)**	4,825
Total comprehensive income, net of tax	**$ 1,486**	$ 7,115
Total comprehensive income attributed to:		
Non-controlling interests	**$ 141**	$ 67
Participating policyholders	**61**	31
Shareholders	**1,284**	7,017

Income Taxes included in Other Comprehensive Income

For the years ended December 31, (Canadian $ in millions)	2016	2015
Income tax expense (recovery) on:		
Unrealized foreign exchange gains/losses on translation of foreign operations	**$ 1**	$ 5
Unrealized foreign exchange gains/losses on net investment hedges	**22**	(48)
Unrealized gains/losses on available-for-sale financial securities	**(15)**	(120)
Reclassification of realized gains/losses and recoveries/impairments to net income on available-for-sale financial securities	**(183)**	(36)
Unrealized gains/losses on cash flow hedges	**15**	(39)
Reclassification of realized gains/losses to net income on cash flow hedges	**6**	6
Share of other comprehensive loss of associates	**–**	(1)
Change in pension and other post-employment plans	**57**	(11)
Real estate revaluation reserve	**–**	1
Total income tax recovery	**$ (97)**	$ (243)

The accompanying notes are an integral part of these Consolidated Financial Statements.

Consolidated Statements of Changes in Equity

For the years ended December 31, (Canadian $ in millions)	2016	2015
Preferred shares		
Balance, beginning of year	**$ 2,693**	$ 2,693
Issued (note 13)	**900**	–
Issuance costs, net of tax	**(16)**	–
Balance, end of year	**3,577**	2,693
Common shares		
Balance, beginning of year	**22,799**	20,556
Issued on exercise of stock options	**66**	37
Issued in exchange of subscription receipts	**–**	2,206
Balance, end of year	**22,865**	22,799
Contributed surplus		
Balance, beginning of year	**277**	267
Exercise of stock options and deferred share units	**(12)**	(6)
Stock option expense	**19**	16
Balance, end of year	**284**	277
Shareholders' retained earnings		
Balance, beginning of year	**8,398**	7,624
Net income attributed to shareholders	**2,929**	2,191
Preferred share dividends	**(133)**	(116)
Common share dividends	**(1,435)**	(1,301)
Balance, end of year	**9,759**	8,398
Shareholders' accumulated other comprehensive income (loss) ("AOCI")		
Balance, beginning of year	**6,992**	2,166
Change in unrealized foreign exchange gains (losses) of net foreign operations	**(1,042)**	5,319
Change in actuarial gains (losses) on pension and other post-employment plans	**104**	8
Change in unrealized gains (losses) on available-for-sale financial securities	**(739)**	(446)
Change in unrealized gains (losses) on derivative instruments designated as cash flow hedges	**32**	(53)
Change in real estate revaluation reserve	**–**	1
Share of other comprehensive loss of associates	**–**	(3)
Balance, end of year	**5,347**	6,992
Total shareholders' equity, end of year	**41,832**	41,159
Participating policyholders' equity		
Balance, beginning of year	**187**	156
Net income attributed to participating policyholders	**61**	30
Other comprehensive income attributed to policyholders	**–**	1
Balance, end of year	**248**	187
Non-controlling interests		
Balance, beginning of year	**592**	464
Net income attributed to non-controlling interests	**143**	69
Other comprehensive loss attributed to non-controlling interests	**(2)**	(2)
Contributions, net	**10**	61
Balance, end of year	**743**	592
Total equity, end of year	**$ 42,823**	$ 41,938

The accompanying notes are an integral part of these Consolidated Financial Statements.

Consolidated Statements of Cash Flows

For the years ended December 31, (Canadian $ in millions)	2016	2015
Operating activities		
Net income	**$ 3,133**	$ 2,290
Adjustments:		
Increase in insurance contract liabilities	**18,014**	7,452
Increase in investment contract liabilities	**–**	203
(Increase) decrease in reinsurance assets, excluding the impact of Closed Block reinsurance transaction	**(842)**	1,391
Amortization of (premium) discount on invested assets	**78**	90
Other amortization	**693**	580
Net realized and unrealized (gains) losses and impairments on assets	**(2,804)**	3,487
Deferred income tax recovery	**(235)**	(343)
Stock option expense	**19**	16
Cash provided by operating activities before undernoted items	**18,056**	15,166
Cash decrease due to Closed Block reinsurance transaction (note 3)	**–**	(2,023)
Changes in policy related and operating receivables and payables	**(1,020)**	(2,769)
Cash provided by operating activities	**17,036**	10,374
Investing activities		
Purchases and mortgage advances	**(104,059)**	(77,141)
Disposals and repayments	**82,001**	66,942
Change in investment broker net receivables and payables	**(186)**	102
Net cash decrease from sale and purchase of subsidiaries and businesses	**(495)**	(3,808)
Cash used in investing activities	**(22,739)**	(13,905)
Financing activities		
Decrease in repurchase agreements and securities sold but not yet purchased	**(23)**	(212)
Issue of long-term debt, net (note 11)	**3,899**	–
Redemption of long-term debt (note 11)	**(158)**	(2,243)
Issue of capital instruments, net (note 12)	**479**	2,089
Redemption of capital instruments (note 12)	**(949)**	(350)
Funds repaid, net	**(19)**	(46)
Secured borrowing from securitization transactions	**847**	436
Changes in deposits from bank clients, net	**(157)**	(351)
Shareholders' dividends paid in cash	**(1,593)**	(1,427)
Contributions from non-controlling interests, net	**10**	61
Common shares issued, net (note 13)	**66**	37
Preferred shares issued, net (note 13)	**884**	–
Cash provided by (used in) financing activities	**3,286**	(2,006)
Cash and short-term securities		
Decrease during the year	**(2,417)**	(5,537)
Effect of foreign exchange rate changes on cash and short-term securities	**(347)**	2,102
Balance, beginning of year	**17,002**	20,437
Balance, December 31	**14,238**	17,002
Cash and short-term securities		
Beginning of year		
Gross cash and short-term securities	**17,885**	21,079
Net payments in transit, included in other liabilities	**(883)**	(642)
Net cash and short-term securities, January 1	**17,002**	20,437
End of year		
Gross cash and short-term securities	**15,151**	17,885
Net payments in transit, included in other liabilities	**(913)**	(883)
Net cash and short-term securities, December 31	**$ 14,238**	$ 17,002
Supplemental disclosures on cash flow information		
Interest received	**$ 10,550**	$ 9,925
Interest paid	**983**	1,071
Income taxes paid	**841**	787

The accompanying notes are an integral part of these Consolidated Financial Statements.

Notes to Consolidated Financial Statements

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Note 1 Nature of Operations and Significant Accounting Policies

(a) Reporting entity

Manulife Financial Corporation ("MFC") is a publicly traded company and the holding company of The Manufacturers Life Insurance Company ("MLI"), a Canadian life insurance company, and John Hancock Reassurance Company Ltd. ("JHRECO"), a Bermudian reinsurance company. MFC and its subsidiaries (collectively, "Manulife" or the "Company") is a leading financial services group with principal operations in Asia, Canada and the United States. Manulife's international network of employees, agents and distribution partners offers financial protection and wealth management products and services to personal and business clients as well as asset management services to institutional customers. The Company operates as Manulife in Canada and Asia and as John Hancock in the United States.

MFC is domiciled in Canada and incorporated under the Insurance Companies Act (Canada) ("ICA"). These Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

These Consolidated Financial Statements should be read in conjunction with "Risk Management" in the 2016 Management's Discussion and Analysis ("MD&A") dealing with IFRS 7 "Financial Instruments: Disclosures" as the discussion on market risk and liquidity risk includes certain disclosures that are considered an integral part of these Consolidated Financial Statements.

These Consolidated Financial Statements as at and for the year ended December 31, 2016 were authorized for issue by MFC's Board of Directors on February 9, 2017.

(b) Basis of preparation

The preparation of Consolidated Financial Statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities, and the disclosure of contingent assets and liabilities as at the date of the Consolidated Financial Statements, and the reported amounts of revenue and expenses during the reporting periods. Actual results may differ from these estimates. The most significant estimation processes relate to the assumptions used in measuring insurance and investment contract liabilities, assessing assets for impairment, determination of pension and other post-employment benefit obligation and expense assumptions, determining income taxes and uncertain tax positions and fair valuation of certain invested assets. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimates are revised and in any future years affected. Although some variability is inherent in these estimates, management believes that the amounts recorded are appropriate. The significant accounting policies used and the most significant judgments made by management in applying these accounting policies in the preparation of these Consolidated Financial Statements are summarized below.

(c) Fair value measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction (not a forced liquidation or distress sale) between market participants at the measurement date, that is, an exit value.

When available, quoted market prices are used to determine fair value. If quoted market prices are not available, fair value is typically based upon alternative valuation techniques such as discounted cash flows, matrix pricing, consensus pricing services and other techniques. Broker quotes are generally used when external public vendor prices are not available.

The Company has a process in place that includes a review of price movements relative to the market, a comparison of prices between vendors, and a comparison to internal matrix pricing which uses predominately external observable data. Judgment is applied in adjusting external observable data for items including liquidity and credit factors.

The Company categorizes its fair value measurements according to a three-level hierarchy. The hierarchy prioritizes the inputs used by the Company's valuation techniques. A level is assigned to each fair value measurement based on the lowest level input significant to the fair value measurement in its entirety. The three levels of the fair value hierarchy are defined as follows:

Level 1 – Fair value measurements that reflect unadjusted, quoted prices in active markets for identical assets and liabilities that the Company has the ability to access at the measurement date reflecting market transactions.

Level 2 – Fair value measurements using inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in inactive markets, inputs that are observable that are not prices (such as interest rates, credit risks, etc.) and inputs that are derived from or corroborated by observable market data. Most debt securities are classified within Level 2. Also, included in the Level 2 category are derivative instruments that are priced using models with observable market inputs, including interest rate swaps, equity swaps, and foreign currency forward contracts.

Level 3 – Fair value measurements using significant non-market observable inputs. These include valuations for assets and liabilities that are derived using data, some or all of which is not market observable, including assumptions about risk. Level 3 securities include

less liquid securities such as structured asset-backed securities, commercial mortgage-backed securities ("CMBS"), certain long duration bonds and other securities that have little or no price transparency. Embedded and complex derivative financial instruments as well as real estate classified as investment property are also included in Level 3.

(d) Basis of consolidation

MFC consolidates the financial statements of all entities, including certain structured entities that it controls. Subsidiaries are entities controlled by the Company. The Company has control over an entity when the Company has the power to govern the financial and operating policies of the entity, is exposed to variable returns from its activities which are significant in relation to the total variable returns of the entity and the Company is able to use its power over the entity to affect its share of variable returns. In assessing control, significant judgment is applied while considering all relevant facts and circumstances. When assessing decision-making power, the Company considers the extent of its rights relative to the management of an entity, the level of voting rights held in an entity which are potentially or presently exercisable, the existence of any contractual management agreements which may provide the Company with power over an entity's financial and operating policies and to the extent of minority ownership in an entity, if any, the possibility for de facto control being present. When assessing returns, the Company considers the significance of direct and indirect financial and non-financial variable returns to the Company from an entity's activities in addition to the proportionate significance of such returns. The Company also considers the degree to which its interests are aligned with those of other parties investing in an entity and the degree to which it may act in its own interest.

The financial statements of subsidiaries and controlled structured entities are included in the Company's consolidated results from the date control is established and are excluded from consolidation from the date control ceases. The initial control assessment is performed at inception and is reconsidered at a later date if the Company acquires or loses power over key operating and financial policies of the entity; acquires additional interests or disposes of interests in the entity; the contractual arrangements of the entity are amended such that the Company's proportionate exposure to variable returns changes; or if the Company's ability to use its power to affect its variable returns from the entity changes.

The Company's Consolidated Financial Statements have been prepared using uniform accounting policies for like transactions and events in similar circumstances. Intercompany balances, and income and expenses arising from intercompany transactions, have been eliminated in preparing the Consolidated Financial Statements.

Non-controlling interests are interests of other parties in the equity of MFC's subsidiaries and are presented within total equity, separate from the equity of MFC's shareholders. Non-controlling interests in the net income and other comprehensive income ("OCI") of MFC's subsidiaries are included in total net income and total other comprehensive income, respectively. An exception to this occurs where the subsidiary's shares are required to be redeemed for cash on a fixed or determinable date, in which case non-controlling interests in the subsidiary's capital are presented as liabilities of the Company and non-controlling interests in the subsidiary's income and OCI are recorded as expenses of the Company.

The equity method of accounting is used to account for entities over which the Company has significant influence ("associates"), whereby the Company records its share of the associate's net assets and financial results using uniform accounting policies for similar transactions and events. Significant judgment is used to determine whether voting rights, contractual management and other relationships with the entity, if any, provide the Company with significant influence over the entity. Gains and losses on the sale of associates are included in income when realized, while impairment losses are recognized immediately when there is objective evidence of impairment. Gains and losses on transactions with associates are eliminated to the extent of the Company's interest in the associate. Investments in associates are included in other invested assets on the Company's Consolidated Statements of Financial Position.

(e) Invested assets

Invested assets that are considered financial instruments are classified as fair value through profit or loss ("FVTPL"), loans and receivables, or as available-for-sale ("AFS") financial assets. The Company determines the classification of its financial assets at initial recognition. Invested assets are recognized initially at fair value plus, in the case of investments not at FVTPL, directly attributable transaction costs. Invested assets are classified as financial instruments at FVTPL if they are held for trading, if they are designated by management under the fair value option, or if they are designated by management when they include one or more embedded derivatives. Invested assets classified as AFS are non-derivative financial assets that do not fall into any of the other categories described above.

Valuation methods for the Company's invested assets are described above. All fair value valuations are performed in accordance with IFRS 13 "Fair Value Measurement". The three levels of the fair value hierarchy and the disclosure of the fair value for financial instruments not carried at fair value on the Consolidated Statements of Financial Position are described in note 4. Fair value valuations are performed by the Company and by third-party service providers. When third-party service providers are engaged, the Company performs a variety of procedures to corroborate pricing information. These procedures may include, but are not limited to, inquiry and review of valuation techniques, inputs to the valuation and vendor controls reports.

Cash and short-term securities comprise cash, current operating accounts, overnight bank and term deposits, and fixed income securities held for the purpose of meeting short-term cash commitments. Short-term securities are carried at fair value. Short-term securities are comprised of investments due to mature within one year of the date of purchase. The carrying value of these instruments approximates fair value due to their short-term maturities and they are generally classified as Level 1. Commercial paper and discount notes are classified as Level 2 because these securities are typically not actively traded. Net payments in transit and overdraft bank balances are included in other liabilities.

Debt securities are carried at fair value. Debt securities are generally valued by independent pricing vendors using proprietary pricing models incorporating current market inputs for similar instruments with comparable terms and credit quality (matrix pricing). The significant inputs include, but are not limited to, yield curves, credit risks and spreads, measures of volatility and prepayment rates. These debt securities are classified as Level 2, but can be Level 3 if the significant inputs are unobservable. Realized gains and losses on sale of debt securities and unrealized gains and losses on debt securities designated as FVTPL are recognized in investment income immediately. Unrealized gains and losses on AFS debt securities are recorded in OCI, with the exception of unrealized gains and losses on foreign currency translation which are included in income. Impairment losses on AFS debt securities are recognized in income when there is objective evidence of impairment. Impairment is considered to have occurred, based on management's judgment, when it is deemed probable that the Company will not be able to collect all amounts due according to the debt security's contractual terms.

Equities are comprised of common and preferred equities and are carried at fair value. Equities are classified as Level 1, as fair values are based on quoted market prices. Realized gains and losses on sale of equities and unrealized gains and losses on equities designated as FVTPL are recognized in investment income immediately. Unrealized gains and losses on AFS equities are recorded in OCI. Impairment losses on AFS equities are recognized in income on an individual security basis when there is objective evidence of impairment. Impairment is considered to have occurred when fair value has declined below cost by significant amounts or for prolonged periods of time. Judgment is applied in determining whether the decline is significant or prolonged.

Mortgages are carried at amortized cost, and are classified as Level 3 due to the lack of observability of certain significant valuation inputs. Realized gains and losses are recorded in investment income immediately. Impairment losses are recorded on mortgages when there is no longer reasonable assurance as to the timely collection of the full amount of principal and interest and are measured based on the discounted value of expected future cash flows at the original effective interest rates inherent in the mortgages. Expected future cash flows are typically determined in reference to the fair value of collateral security underlying the mortgages, net of expected costs of realization and any applicable insurance recoveries. Significant judgment is applied in the determination of impairment including the timing and account of future collections.

The Company accounts for insured and uninsured mortgage securitizations as secured financing transactions since the criteria for sale accounting are not met. For these transactions, the Company continues to recognize the mortgages and records a liability in other liabilities for the amount owed at maturity. Interest income from these mortgages and interest expense on the borrowing are recorded using the effective interest rate method.

Private placements, which include corporate loans for which there is no active market, are carried at amortized cost. Realized gains and losses are recorded in income immediately. Impairment losses are recorded on private placements when there is no longer assurance as to the timely collection of the full amount of principal and interest. Impairment is measured based on the discounted value of expected future cash flows at the original effective interest rates inherent in the loans. Significant judgment is applied in the determination of impairment including the timing and amount of future collections.

Policy loans are carried at an amount equal to their unpaid balance. Policy loans are fully collateralized by the cash surrender value of the underlying policies.

Loans to Manulife Bank of Canada ("Manulife Bank" or "Bank") clients are carried at unpaid principal less allowance for credit losses, if any. Loans to Bank clients are considered impaired when there is objective evidence of impairment as a result of one or more loss events that have occurred after initial recognition, with a negative impact on the estimated future cash flows of a loan.

Once established, allowances for impairment of mortgages, private placements and loans to Bank clients are reversed only if the conditions that caused the impairment no longer exist. Reversals of impairment charges on AFS debt securities are only recognized in income to the extent that increases in fair value can be attributed to events subsequent to the impairment loss being recorded. Impairment losses for AFS equity instruments are not reversed through income. On disposition of an impaired asset, any allowance for impairment is released.

In addition to impairments and provisions for loan losses (recoveries) reported in investment income, the measurement of insurance contract liabilities via the investment return assumptions include expected future credit losses on fixed income investments. Refer to note 8 (d).

Interest income is recognized on debt securities, mortgages, private placements, policy loans and loans to Bank clients as it accrues and is calculated by using the effective interest rate method. Premiums, discounts and transaction costs are amortized over the life of the underlying investment using the effective yield method for all debt securities as well as mortgages and private placements measured at amortized cost.

The Company records purchases and sales of invested assets on a trade date basis, except for loans originated by the Company, which are recognized on a settlement date basis.

Real estate consists of both own use and investment property. Own use property is carried at cost less accumulated depreciation and any accumulated impairment losses. Depreciation is calculated based on the cost of an asset less its residual value and is recognized in income on a straight-line basis over the estimated useful life ranging from 30 to 60 years. Impairment losses are recorded in income to the extent the recoverable amount is less than the carrying amount. Where own use property is included in assets backing insurance contract liabilities, the fair value of own use property is used in the valuation of insurance contract liabilities.

Investment property is property held to earn rental income, for capital appreciation, or both. Investment property is measured at fair value with changes in fair value recognized in income. Fair value is determined using external appraisals that are based on the highest

and best use of the property. The valuation techniques used include discounted cash flows, the direct capitalization method as well as comparable sales analysis and include both observable and unobservable inputs. Inputs include existing and assumed tenancies, market data from recent comparable transactions, future economic outlook and market risk assumptions, capitalization rates and internal rates of return. Investment property is classified as Level 3.

Other invested assets include private equity and property investments held in power and infrastructure and timber as well as in agriculture and oil and gas sectors. Private equity investments are accounted for as associates using the equity method (as described in note 1(d) above) or are classified as FVTPL or AFS and carried at fair value. Investments in oil and gas exploration and evaluation costs are measured on a "successful efforts" basis. Timber and agriculture properties are measured at fair value with changes in fair value recognized in income with the exception of bearer plants which are measured at amortized cost (refer to note 2(II)). The fair value of other invested assets is determined using a variety of valuation techniques as described in note 4. Other invested assets that are measured at fair value are classified as Level 3.

Other invested assets also include investments in leveraged leases, which are accounted for using the equity method. The carrying value under the equity method reflects the amortized cost of the lease receivable and related non-recourse debt using the effective yield method.

(f) Goodwill and intangible assets

Goodwill represents the difference between the purchase consideration of an acquired business and the Company's proportionate share of the net identifiable assets acquired and liabilities and contingent liabilities assumed. It is initially recorded at cost and subsequently measured at cost less any accumulated impairment.

Goodwill is tested for impairment at least annually and whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable at the cash generating unit ("CGU") or group of CGUs level. The Company allocates goodwill to CGUs or groups of CGUs for the purpose of impairment testing based on the lowest level within the entity in which the goodwill is monitored for internal management purposes. The allocation is made to those CGUs or groups of CGUs that are expected to benefit from the business combination in which the goodwill arose. Any potential impairment of goodwill is identified by comparing the recoverable amount of a CGU or group of CGUs to its carrying value. Goodwill is reduced by the amount of deficiency, if any. If the deficiency exceeds the carrying amount of goodwill, the carrying values of the remaining assets in the CGU or group of CGUs are subject to being reduced by the excess on a pro-rata basis.

The recoverable amount of a CGU is the higher of the estimated fair value less costs to sell or the value-in-use of the CGU. In assessing value-in-use, the estimated future cash flows are discounted using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In some cases, the most recent detailed calculation made in a prior period of the recoverable amount of a CGU is used in the testing of impairment of goodwill in the current period. This is the case only if there are no significant changes to the CGU, the likelihood of impairment is remote based on the analysis of current events and circumstances, and the most recent recoverable amount substantially exceeds the carrying amount of the CGU.

Intangible assets with indefinite useful lives include the John Hancock brand name and certain investment management contracts. The indefinite useful life assessment for brand is based on the brand name being protected in markets where branded products are sold by trademarks, which are renewable indefinitely, and for certain investment management contracts due to the ability to renew the contracts indefinitely. In addition, there are no legal, regulatory or contractual provisions that limit the useful lives of these intangible assets. An intangible asset with an indefinite useful life is not amortized but is subject to an annual impairment test which is performed more frequently if there is an indication that it is not recoverable.

Intangible assets with finite useful lives include acquired distribution networks, customer relationships, capitalized software, certain investment management contracts and other contractual rights. Distribution networks, customer relationships, and other finite life intangible assets are amortized over their estimated useful lives, five to 68 years, either based on straight-line or in relation to other asset consumption metrics. Software intangible assets are amortized on a straight-line basis over their estimated useful lives of three to five years. Finite life intangible assets are assessed for indicators of impairment at each reporting period, or more frequently when events or changes in circumstances dictate. If any indication of impairment exists, these assets are subject to an impairment test.

(g) Miscellaneous assets

Miscellaneous assets include assets in a rabbi trust with respect to unfunded defined benefit obligations, deferred acquisition costs, capital assets and defined benefit assets, if any (refer to note 1(o)). Deferred acquisition costs are carried at cost less accumulated amortization. These costs are recognized over the period where redemption fees may be charged or over the period revenue is earned. Capital assets are carried at cost less accumulated amortization computed on a straight-line basis over their estimated useful lives, which vary from two to 10 years.

(h) Segregated funds

The Company manages a number of segregated funds on behalf of policyholders. The investment returns on these funds are passed directly to policyholders. In some cases, the Company has provided guarantees associated with these funds.

Segregated funds net assets are measured at fair value and primarily include investments in mutual funds, debt securities, equities, real estate, short-term investments and cash and cash equivalents. With respect to the consolidation requirement of IFRS, in assessing the Company's degree of control over the underlying investments, the Company considers the scope of its decision making rights, the

rights held by other parties, its remuneration as an investment manager and its exposure to variability of returns. The Company has determined that it does not have control over the underlying investments as it acts as an agent on behalf of segregated fund policyholders.

The methodology applied to determine the fair value of investments held in segregated funds is consistent with that applied to invested assets held by the general fund, as described above in note 1(e). Segregated funds net liabilities are measured based on the value of the segregated funds net assets. Investment returns on segregated fund assets belong to policyholders and the Company does not bear the risk associated with these assets outside of guarantees offered on certain variable life and annuity products, for which the underlying investments are held within segregated funds. Accordingly, investment income earned by segregated funds and expenses incurred by segregated funds are offset and are not separately presented in the Consolidated Statements of Income. Fee income earned by the Company for managing the segregated funds is included in other revenue. Refer to note 22.

Liabilities related to guarantees associated with certain funds, as a result of certain variable life and annuity contracts, are recorded within the Company's insurance contract liabilities. The Company holds assets supporting these guarantees which are recognized in invested assets according to their investment type.

(i) Insurance and investment contract liabilities

Most contracts issued by the Company are considered insurance, investment or service contracts. Contracts under which the Company accepts significant insurance risk from a policyholder are classified as insurance contracts in the Consolidated Financial Statements. A contract is considered to have significant insurance risk if, and only if, an insured event could cause an insurer to make significant additional payments in any scenario, excluding scenarios that lack commercial substance at the inception of the contract. Contracts under which the Company does not accept significant insurance risk are either classified as investment contracts or considered service contracts and are accounted for in accordance with IAS 39 "Financial Instruments: Recognition and Measurement" or IAS 18 "Revenue", respectively.

Once a contract has been classified as an insurance contract it remains an insurance contract even if the insurance risk reduces significantly. Investment contracts can be reclassified as insurance contracts if insurance risk subsequently becomes significant.

Insurance contract liabilities, net of reinsurance assets, represent the amount which, together with estimated future premiums and net investment income, will be sufficient to pay estimated future benefits, policyholder dividends and refunds, taxes (other than income taxes) and expenses on policies in-force. Insurance contract liabilities are presented gross of reinsurance assets on the Consolidated Statements of Financial Position. The Company's Appointed Actuary is responsible for determining the amount of insurance contract liabilities in accordance with standards established by the Canadian Institute of Actuaries. Insurance contract liabilities, net of reinsurance assets, have been determined using Canadian Asset Liability Method ("CALM") as permitted by IFRS 4 "Insurance Contracts". Refer to note 8.

Investment contract liabilities include contracts issued to retail and institutional investors that do not contain significant insurance risk. Investment contract liabilities and deposits are measured at amortized cost or at fair value by election. The election only reduces accounting mismatches between the assets supporting the contracts and the liabilities. The liability is derecognized when the contract expires, is discharged or is cancelled.

Derivatives embedded within insurance contracts are separated if they are not considered to be closely related to the host insurance contract and do not meet the definition of an insurance contract. These embedded derivatives are presented separately in other assets or other liabilities and are measured at fair value with changes in fair value recognized in income.

(j) Reinsurance assets

The Company uses reinsurance in the normal course of business to manage its risk exposure. Insurance ceded to a reinsurer does not relieve the Company from its obligations to policyholders. The Company remains liable to its policyholders for the portion reinsured to the extent that any reinsurer does not meet its obligations for reinsurance ceded to it under a reinsurance agreement.

Reinsurance assets represent the benefit derived from reinsurance agreements in-force at the reporting date, taking into account the financial condition of the reinsurer. Amounts recoverable from reinsurers are estimated in accordance with the terms of the relevant reinsurance contract.

Gains or losses on reinsurance transactions are recognized in income immediately on the transaction date and are not amortized. Premiums ceded and claims reimbursed are presented on a gross basis on the Consolidated Statements of Income. Reinsurance assets are not offset against the related insurance contract liabilities and are presented separately on the Consolidated Statements of Financial Position. Refer to note 8(a).

(k) Other financial instruments accounted for as liabilities

The Company issues a variety of other financial instruments classified as liabilities, including notes payable, term notes, senior notes, senior debentures, subordinated notes, surplus notes, subscription receipts and preferred shares. These financial liabilities are measured at amortized cost, with issuance costs deferred and amortized using the effective interest rate method.

(l) Income taxes

The provision for income taxes is calculated based on income tax laws and income tax rates substantively enacted as at the date of the Consolidated Statements of Financial Position. The income tax provision is comprised of current income taxes and deferred income taxes. Current and deferred income taxes relating to items recognized in OCI and directly in equity are similarly recognized in OCI and directly in equity, respectively.

Current income taxes are amounts expected to be payable or recoverable as a result of operations in the current year and any adjustments to taxes payable in respect of previous years.

Deferred income taxes are provided for using the liability method and result from temporary differences between the carrying values of assets and liabilities and their respective tax bases. Deferred income taxes are measured at the substantively enacted tax rates that are expected to be applied to temporary differences when they reverse.

A deferred tax asset is recognized to the extent that future realization of the tax benefit is probable. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the tax benefit will be realized. Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets and they relate to income taxes levied by the same tax authority on the same taxable entity.

Deferred tax liabilities are recognized for all taxable temporary differences, except in respect of taxable temporary differences associated with investments in subsidiaries and associates, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

The Company records provisions for uncertain tax positions if it is probable that the Company will make a payment on tax positions as a result of examinations by the tax authorities. These provisions are measured at the Company's best estimate of the amount expected to be paid. Provisions are reversed to income in the period in which management assesses they are no longer required or determined by statute.

The Company is subject to income tax laws in various jurisdictions. Tax laws are complex and potentially subject to different interpretations by the taxpayer and the relevant tax authority. The provision for income taxes and deferred income taxes represents management's interpretation of the relevant tax laws and its estimate of current and future income tax implications of the transactions and events during the year. The Company may be required to change its provision for income taxes or deferred income tax balances when the ultimate deductibility of certain items is successfully challenged by taxing authorities, or if estimates used in determining the amount of deferred tax asset to recognize change significantly, or when receipt of new information indicates the need for adjustment in the amount of deferred income taxes to be recognized. Additionally, future events, such as changes in tax laws, tax regulations, or interpretations of such laws or regulations, could have an impact on the provision for income taxes, deferred tax balances and the effective tax rate. Any such changes could materially affect the amounts reported in the Consolidated Financial Statements in the period these changes occur.

(m) Foreign currency translation

Items included in the financial statements of each of the Company's subsidiaries are measured using the currency of the primary economic environment in which the entity operates (the "functional currency").

Transactions in a foreign currency are translated to the functional currency at the exchange rate prevailing at the date of the transaction. Assets and liabilities denominated in foreign currencies are translated to the functional currency at the exchange rate in effect at the reporting date. Revenue and expenses denominated in foreign currencies are translated at the average exchange rate prevailing during the quarter reported. Exchange gains and losses are recognized in income with the exception of translation of net investments in foreign operations and the results of hedging these positions. These foreign exchange gains and losses are recognized in OCI until such time that the foreign operation is disposed of or control or significant influence over it is lost.

(n) Stock-based compensation

The Company provides stock-based compensation to certain employees and directors as described in note 15. Compensation expense of equity instruments is accrued based on the best estimate of the number of instruments expected to vest, with revisions made to that estimate if subsequent information indicates that actual forfeitures are likely to differ from initial estimates, unless forfeitures are due to market-based conditions.

Stock options are expensed with a corresponding increase in contributed surplus. Restricted share units, special restricted share units and deferred share units are expensed with a corresponding liability accrued based on the market value of MFC's common shares at the end of each quarter. Performance share units are expensed with a corresponding liability accrued based on specific performance conditions and the market value of MFC's common shares. The change in the value of the awards resulting from changes in the market value of the Company's common shares or changes in the specific performance conditions and credited dividends is recognized in income, offset by the impact of total return swaps used to manage the variability of the related liability.

Stock-based compensation cost is recognized over the applicable vesting period, except if the employee is eligible to retire at the time of grant or will be eligible to retire during the vesting period. Compensation cost, attributable to stock options and restricted share units granted to employees who are eligible to retire on the grant date or who will become eligible to retire during the vesting period, is recognized over the period from the grant date to the date of retirement eligibility.

Contributions to the Global Share Ownership Plan ("GSOP") (refer to note 15(d)), are expensed as incurred. Under the GSOP, subject to certain conditions, the Company will match a percentage of an employee's eligible contributions to certain maximums. All contributions are used by the plan's trustee to purchase MFC common shares in the open market.

(o) Employee future benefits

The Company maintains defined contribution and defined benefit pension plans and other post-employment plans for employees and agents including registered (tax qualified) pension plans that are typically funded as well as supplemental non-registered (non-qualified) pension plans for executives, retiree welfare plans and disability welfare plans that are typically not funded.

The Company's obligation in respect of defined benefit pension and other post-employment benefits is calculated for each plan as the estimated present value of the future benefits that eligible employees have earned in return for their service up to the reporting date using the projected benefit method. The discount rate used is based on the yield at the reporting date on high quality corporate debt securities that have approximately the same term as the obligations and that are denominated in the same currency in which the benefits are expected to be paid.

To determine the Company's net defined benefit asset or liability, the fair value of plan assets are deducted from the defined benefit obligations. When this calculation results in a surplus, the asset that can be recognized is limited to the present value of future economic benefit available in the form of future refunds from the plan or reductions in future contributions to the plan (the asset limit).

Defined benefit assets are included in other assets and defined benefit liabilities are included in other liabilities. The net benefit cost for the year is recognized in income and is calculated as the sum of the service cost in respect of the fiscal year, the net interest income or expense and any applicable administration expenses, plus past service costs or credits resulting from plan amendments or curtailments. The net interest income or expense is determined by applying the discount rate to the net defined benefit asset or liability. Changes in the net defined benefit asset or liability due to re-measurement of pension and retiree welfare plans are recorded in OCI in the period in which they occur and are not reclassified to income in subsequent periods. They consist of actuarial gains and losses, the impact of the asset limit if any, and the return on plan assets, excluding amounts included in net interest income or expense. Changes in the net defined benefit asset or liability due to re-measurement of disability welfare plans are recognized in income in the period in which they occur.

The cost of defined contribution plans is the contribution provided by the Company and is recognized in income in the periods during which services are rendered by employees.

The cost of retiree welfare plans is recognized in income over the employees' years of service to their dates of full entitlement.

The current year cost of disability welfare plans is the year-over-year change in the defined benefit obligation, including any actuarial gains or losses.

(p) Derivative and hedging instruments

The Company uses derivative financial instruments ("derivatives") including swaps, forward and futures agreements, and options to manage current and anticipated exposures to changes in interest rates, foreign exchange rates, commodity prices and equity market prices, and to replicate permissible investments. Derivatives embedded in other financial instruments ("host instruments") are separately recorded as derivatives when their economic characteristics and risks are not closely related to those of the host instrument, the terms of the embedded derivative are the same as those of a standalone derivative and the host instrument itself is not recorded at FVTPL. Derivatives are recorded at fair value. Derivatives with unrealized gains are reported as derivative assets and derivatives with unrealized losses are reported as derivative liabilities.

A determination is made for each derivative as to whether to apply hedge accounting. Where hedge accounting is not applied, changes in the fair value of derivatives are recorded in investment income. Refer to note 4.

Where the Company has elected to apply hedge accounting, a hedging relationship is designated and documented at inception. Hedge effectiveness is evaluated at inception and throughout the term of the hedge and hedge accounting is only applied when the Company expects that the hedging relationship will be highly effective in achieving offsetting changes in fair value or changes in cash flows attributable to the risk being hedged. The assessment of hedge effectiveness is performed at the end of each reporting period both prospectively and retrospectively. When it is determined that a hedging relationship is no longer effective, or the hedging instrument or the hedged item has been sold or terminated, the Company discontinues hedge accounting prospectively. In such cases, if the derivatives are not sold or terminated, any subsequent changes in fair value of the derivatives are recognized in investment income.

For derivatives that are designated as hedging instruments, changes in fair value are recognized according to the nature of the risks being hedged, as discussed below.

In a fair value hedging relationship, changes in the fair value of the hedging derivatives are recorded in investment income, along with changes in fair value attributable to the hedged risk. The carrying value of the hedged item is adjusted for changes in fair value attributable to the hedged risk. To the extent the changes in the fair value of derivatives do not offset the changes in the fair value of the hedged item attributable to the hedged risk in investment income, any ineffectiveness will remain in investment income. When hedge accounting is discontinued, the carrying value of the hedged item is no longer adjusted and the cumulative fair value adjustments are amortized to investment income over the remaining term of the hedged item unless the hedged item is sold, at which time the balance is recognized immediately in investment income.

In a cash flow hedging relationship, the effective portion of the changes in the fair value of the hedging instrument is recorded in OCI while the ineffective portion is recognized in investment income. Gains and losses accumulated in OCI are recognized in income during the same periods as the variability in the cash flows hedged or the hedged forecasted transactions are recognized in income. The reclassifications from accumulated other comprehensive income ("AOCI") are made to investment income, with the exception of total return swaps that hedge restricted share units, which are reclassified to general expenses.

Gains and losses on cash flow hedges accumulated in OCI are reclassified immediately to investment income when the hedged item is sold or the forecasted transaction is no longer expected to occur. When a hedge is discontinued, but the hedged forecasted

transaction remains highly probable to occur, the amounts accumulated in OCI are reclassified to investment income in the periods during which variability in the cash flows hedged or the hedged forecasted transaction is recognized in income.

In a net investment hedging relationship, the gains and losses relating to the effective portion of the hedge are recorded in OCI. Gains and losses in AOCI are recognized in income during the periods when gains or losses on the underlying hedged net investment in foreign operations are recognized in income.

(q) Premium income and related expenses

Gross premiums for all types of insurance contracts, and contracts with limited mortality or morbidity risk, are generally recognized as revenue when due. Premiums are reported gross of reinsurance ceded (refer to note 8). Revenue on service contracts is recognized as services are rendered.

Expenses are recognized when incurred. Insurance contract liabilities are computed at the end of each year, resulting in benefits and expenses being matched with the premium income.

Note 2 Accounting and Reporting Changes

(a) Changes in accounting policy

(I) Amendments to IAS 16 "Property, Plant and Equipment" and IAS 38 "Intangible Assets"

Effective January 1, 2016, the Company adopted the amendments issued in May 2014 to IAS 16 "Property, Plant and Equipment" and IAS 38 "Intangible Assets". These amendments were applied prospectively. The amendments clarified that depreciation or amortization of assets accounted for under these two standards should reflect a pattern of consumption of the assets rather than reflect economic benefits expected to be generated from the assets. Adoption of these amendments did not have a significant impact on the Company's Consolidated Financial Statements.

(II) Amendments to IAS 41 "Agriculture" and IAS 16 "Property, Plant and Equipment"

Effective January 1, 2016, the Company adopted the amendments issued in June 2014 to IAS 41 "Agriculture" and IAS 16 "Property, Plant and Equipment". These amendments were applied retrospectively. These amendments require that "bearer plants" (that is, plants used in the production of agricultural produce and not intended to be sold as a living plant except for incidental scrap sales) should be considered as property, plant and equipment in the scope of IAS 16 and should be measured either at amortized cost or revalued amount with changes recognized in OCI. Previously these plants were in the scope of IAS 41 and were measured at fair value less cost to sell. These amendments only apply to the accounting requirements of a bearer plant and not agricultural land properties. The Company chose to carry bearer plants at amortized cost. Adoption of these amendments did not have a significant impact on the Company's Consolidated Financial Statements.

(III) Amendments to IFRS 10 "Consolidated Financial Statements", IFRS 12 "Disclosure of Interests in Other Entities", and IAS 28 "Investments in Associates and Joint Ventures"

Effective January 1, 2016, the Company adopted the amendments issued in December 2014 to IFRS 10 "Consolidated Financial Statements", IFRS 12 "Disclosure of Interests in Other Entities", and IAS 28 "Investments in Associates and Joint Ventures". These amendments were applied retrospectively. The amendments clarify the requirements when applying the investment entities consolidation exception. Adoption of these amendments did not have a significant impact on the Company's Consolidated Financial Statements.

(b) Future accounting and reporting changes

(I) Annual Improvements 2014–2016 Cycle

Annual Improvements 2014-2016 Cycle were issued in December 2016 resulting in minor amendments to three standards and are effective for the Company starting January 1, 2017. While the Company is assessing the impact of these amendments, adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(II) IFRS 16 "Leases"

IFRS 16 "Leases" was issued in January 2016 and is effective for years beginning on or after January 1, 2019, to be applied retrospectively or on a modified retrospective basis. It will replace IAS 17 "Leases" and IFRIC 4 "Determining whether an arrangement contains a lease". IFRS 16 sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract, the customer ("lessee") and the supplier ("lessor"). The standard brings most leases on-balance sheet for lessees under a single model, eliminating the previous classifications of operating and finance leases. Exemptions to this treatment are for lease contracts with low value assets or leases with duration of less than one year. The on-balance sheet treatment will result in the grossing up of the balance sheet due to right-of-use assets being recognized with offsetting liabilities. Lessor accounting will remain largely unchanged with previous classifications of operating and finance leases being maintained. The Company is assessing the impact of this standard.

(III) Amendments to IAS 7 "Statement of Cash Flows"

Amendments to IAS 7 "Statement of Cash Flows" were issued in January 2016 and are effective for annual periods beginning on or after January 1, 2017, to be applied prospectively. These amendments require companies to provide information about changes in their financing liabilities. Adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(IV) IFRIC 22 "Foreign Currency Transactions and Advance Consideration"
IFRIC 22 "Foreign Currency Transactions and Advance Consideration" was issued in December 2016 and will be effective for annual periods beginning on or after January 1, 2018 and may be applied retrospectively or prospectively. IFRIC 22 addresses which foreign exchange rate to use to measure a foreign currency transaction when advance payments are made or received and non-monetary assets or liabilities are recognized prior to recognition of the underlying transaction. IFRIC 22 does not relate to goods or services accounted for at fair value or at the fair value of consideration paid or received at a date other than the date of initial recognition of the non-monetary asset or liability, or to income taxes, insurance contracts or reinsurance contracts. The foreign exchange rate on the day of the advance payment is used to measure the foreign currency transaction. If multiple advance payments are made or received, each payment is measured separately. The Company is assessing the impact of this standard.

(V) IFRS 9 "Financial Instruments"
IFRS 9 "Financial Instruments" was issued in November 2009 and amended in October 2010, November 2013 and July 2014, and is effective for years beginning on or after January 1, 2018, to be applied retrospectively, or on a modified retrospective basis. It is intended to replace IAS 39 "Financial Instruments: Recognition and Measurement".

The project has been divided into three phases: classification and measurement, impairment of financial assets, and hedge accounting. IFRS 9's current classification and measurement methodology provides that financial assets are measured at either amortized cost or fair value on the basis of the entity's business model for managing the financial assets and the contractual cash flow characteristics of the financial assets. The classification and measurement for financial liabilities remains generally unchanged; however, for a financial liability designated as at fair value through profit or loss, revisions have been made in the accounting for changes in fair value attributable to changes in the credit risk of that liability. Gains or losses caused by changes in an entity's own credit risk on such liabilities are no longer recognized in profit or loss but instead are reflected in OCI.

Revisions to hedge accounting were issued in November 2013 as part of the overall IFRS 9 project. The amendment introduces a new hedge accounting model, together with corresponding disclosures about risk management activity for those applying hedge accounting. The new model represents a substantial overhaul of hedge accounting that will enable entities to better reflect their risk management activities in their financial statements.

Revisions issued in July 2014 replace the existing incurred loss model used for measuring the allowance for credit losses with an expected loss model. Changes were also made to the existing classification and measurement model designed primarily to address specific application issues raised by early adopters of the standard. They also address the income statement accounting mismatches and short-term volatility issues which have been identified as a result of the insurance contracts project.

The Company expects to defer IFRS 9 until January 1, 2021, as allowed under the amendments to IFRS 4 "Insurance Contracts" outlined below.

(VI) Amendments to IFRS 4 "Insurance Contracts"
Amendments to IFRS 4 "Insurance Contracts" were issued in September 2016, which will be effective for annual periods beginning on or after January 1, 2018. The amendments introduce two approaches to address concerns about the differing effective dates of IFRS 9 "Financial Instruments" and the forthcoming new insurance contracts standard: the overlay approach and the deferral approach. The overlay approach provides an option for all issuers of insurance contracts to adjust profit or loss for eligible financial assets by removing any additional accounting volatility that may arise from applying IFRS 9 before the new insurance contracts standard. The deferral approach provides companies whose activities are predominantly related to insurance an optional temporary exemption from applying IFRS 9 until January 1, 2021. The Company expects to defer IFRS 9 until January 1, 2021.

(VII) Amendments to IAS 12 "Income Taxes"
Amendments to IAS 12 "Income Taxes" were issued in January 2016 and are effective for years beginning on or after January 1, 2017, to be applied retrospectively. The amendments clarify recognition of deferred tax assets relating to unrealized losses on debt instruments measured at fair value. A deductible temporary difference arises when the carrying amount of the debt instrument measured at fair value is less than the cost for tax purposes, irrespective of whether the debt instrument is held for sale or held to maturity. The recognition of the deferred tax asset that arises from this deductible temporary difference is considered in combination with other deferred taxes applying local tax law restrictions where applicable. In addition, when estimating future taxable profits, consideration can be given to recovering more than the asset's carrying amount where probable. Adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(VIII) Amendments to IFRS 2 "Share-Based Payment"
Amendments to IFRS 2 "Share-Based Payment" were issued in June 2016 and are effective for annual periods beginning on or after January 1, 2018, to be applied prospectively. The amendments clarify the effects of vesting and non-vesting conditions on the measurement of cash-settled share-based payments; provide guidance on the classification of share-based payment transactions with net settlement features for withholding tax obligations; and clarify accounting for modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. Adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(IX) IFRS 15 "Revenue from Contracts with Customers"
IFRS 15 "Revenue from Contracts with Customers" was issued in May 2014 and replaces IAS 11 "Construction Contracts", IAS 18 "Revenue" and several interpretations. Amendments to IFRS 15 were issued in April 2016. IFRS 15 as amended is effective for annual periods beginning on or after January 1, 2018, to be applied as described below.

IFRS 15 clarifies revenue recognition principles, provides a robust framework for recognizing revenue and cash flows arising from contracts with customers and enhances qualitative and quantitative disclosure requirements. IFRS 15 does not apply to insurance contracts, financial instruments and lease contracts. Accordingly, the adoption of IFRS 15 may impact the revenue recognition related to the Company's asset management and service contracts and may result in additional financial statement disclosure.

The amendments clarify when a promised good or service is separately identifiable from other promises in a contract; provide clarifications on how to apply the principal versus agent application guidance; and provide clarifications on how an entity will evaluate the nature of a promise to grant a license of intellectual property to determine whether the promise is satisfied over time or at a point in time.

The amendments provide two practical expedients to alleviate transition burden. An entity that uses the full retrospective approach may apply IFRS 15 only to contracts that are not completed as at the beginning of the earliest period presented. An entity may determine the aggregate effect of all of the modifications that occurred between contract inception and the earliest date presented, rather than accounting for the effects of each modification separately. The Company is assessing the impact of this standard.

Note 3 Acquisitions and Distribution Agreement

(a) Mandatory Provident Fund businesses of Standard Chartered
On November 1, 2016, the Company completed its acquisition of Standard Chartered's Mandatory Provident Fund ("MPF") and Occupational Retirement Schemes Ordinance ("ORSO") businesses in Hong Kong, and the related investment management entity. In addition, on November 1, 2016, the Company commenced its 15 year exclusive distribution partnership with Standard Chartered. These arrangements significantly expand Manulife's retirement business in Hong Kong. Total consideration of $392 was paid in cash.

(b) Distribution agreement with DBS Bank Ltd ("DBS")
Effective January 1, 2016, the Company entered into a 15-year regional distribution agreement with DBS covering Singapore, Hong Kong, mainland China and Indonesia. The arrangement expands the Company's strategy for growth in Asia. The Company recognized $536 of distribution network intangible assets on the agreement's effective date.

(c) Canadian-based operations of Standard Life plc
On January 30, 2015, the Company completed its acquisition of 100 per cent of the shares of Standard Life Financial Inc. and of Standard Life Investments Inc., collectively the Canadian-based operations of Standard Life plc ("Standard Life"). The acquisition contributes to the Company's growth strategy, particularly in wealth and asset management.

The purchase consideration of $4 billion was paid in cash. The Company recognized $1,477 of tangible net assets, $1,010 of intangible assets, and $1,513 of goodwill.

(d) Retirement plan services business of New York Life
On April 14, 2015, the Company completed its acquisition of New York Life's ("NYL") Retirement Plan Services ("RPS") business. The acquisition of the NYL RPS business supports Manulife's global growth strategy for wealth and asset management businesses.

The purchase consideration of $787 included conventional financial consideration of $398 plus $389 of net impact of the assumption by NYL of the Company's in-force participating life insurance closed block ("Closed Block") through net 60% reinsurance agreements, effective July 1, 2015. The Company recognized $128 of intangible assets and $659 of goodwill. Finalization of the purchase price allocation in 2016 did not result in significant changes to amounts recognized.

Note 4 Invested Assets and Investment Income

(a) Carrying values and fair values of invested assets

As at December 31, 2016	FVTPL[1]	AFS[2]	Other[3]	Total carrying value	Total fair value[9]
Cash and short-term securities[4]	**$ 269**	**$ 11,705**	**$ 3,177**	**$ 15,151**	**$ 15,151**
Debt securities[5]					
Canadian government and agency	**18,030**	**6,715**	**–**	**24,745**	**24,745**
U.S. government and agency	**13,971**	**13,333**	**–**	**27,304**	**27,304**
Other government and agency	**18,629**	**2,312**	**–**	**20,941**	**20,941**
Corporate	**87,374**	**5,041**	**–**	**92,415**	**92,415**
Mortgage/asset-backed securities	**2,886**	**331**	**–**	**3,217**	**3,217**
Public equities	**16,531**	**2,965**	**–**	**19,496**	**19,496**
Mortgages	**–**	**–**	**44,193**	**44,193**	**45,665**
Private placements	**–**	**–**	**29,729**	**29,729**	**31,459**
Policy loans	**–**	**–**	**6,041**	**6,041**	**6,041**
Loans to Bank clients	**–**	**–**	**1,745**	**1,745**	**1,746**
Real estate					
Own use property[6]	**–**	**–**	**1,376**	**1,376**	**2,524**
Investment property	**–**	**–**	**12,756**	**12,756**	**12,756**
Other invested assets					
Alternative long-duration assets[7]	**10,707**	**96**	**8,048**	**18,851**	**19,193**
Various other[8]	**164**	**–**	**3,745**	**3,909**	**3,910**
Total invested assets	**$ 168,561**	**$ 42,498**	**$ 110,810**	**$ 321,869**	**$ 326,563**

As at December 31, 2015	FVTPL[1]	AFS[2]	Other[3]	Total carrying value	Total fair value[9]
Cash and short-term securities[4]	$ 574	$ 13,548	$ 3,763	$ 17,885	$ 17,885
Debt securities[5]					
Canadian government and agency	16,965	4,318	–	21,283	21,283
U.S. government and agency	15,964	12,688	–	28,652	28,652
Other government and agency	17,895	1,688	–	19,583	19,583
Corporate	80,269	4,925	–	85,194	85,194
Mortgage/asset-backed securities	2,797	318	–	3,115	3,115
Public equities	14,689	2,294	–	16,983	16,983
Mortgages	–	–	43,818	43,818	45,307
Private placements	–	–	27,578	27,578	29,003
Policy loans	–	–	5,912	5,912	5,912
Loans to Bank clients	–	–	1,778	1,778	1,782
Real estate					
Own use property[6]	–	–	1,379	1,379	2,457
Investment property	–	–	13,968	13,968	13,968
Other invested assets					
Alternative long-duration assets[7]	8,952	76	7,253	16,281	16,261
Various other[8]	163	–	3,934	4,097	4,097
Total invested assets	$ 158,268	$ 39,855	$ 109,383	$ 307,506	$ 311,482

(1) The FVTPL classification was elected for securities backing insurance contract liabilities in order to substantially reduce any accounting mismatch arising from changes in the value of these assets and changes in the value of the related insurance contract liabilities. There would otherwise be a mismatch if the available-for-sale ("AFS") classification was selected because changes in insurance contract liabilities are recognized in net income rather than in OCI.

(2) Securities that are designated as AFS are not actively traded by the Company but sales do occur as circumstances warrant. Such sales result in a reclassification of any accumulated unrealized gain (loss) in AOCI to net income as a realized gain (loss).

(3) Primarily includes assets classified as loans and carried at amortized cost, own use property, investment property, equity method accounted investments, oil and gas investments, and leveraged leases. Refer to note 1(e) for further details regarding accounting policy.

(4) Includes short-term securities with maturities of less than one year at acquisition amounting to $3,111 (2015 – $4,796) cash equivalents with maturities of less than 90 days at acquisition amounting to $8,863 (2015 – $9,326) and cash of $3,177 (2015 – $3,763).

(5) Debt securities include securities which were acquired with maturities of less than one year and less than 90 days of $893 and $192, respectively (2015 – $905 and $39, respectively).

(6) Includes accumulated depreciation of $404 (2015 – $366).

(7) Includes investments in private equity of $4,619, power and infrastructure of $6,679, oil and gas of $2,093, timber and agriculture of $4,972 and various other invested assets of $487 (2015 – $3,754, $5,260, $1,740, $5,092 and $435, respectively).

(8) Includes $3,368 (2015 – $3,549) of leveraged leases. Refer to note 1(e) regarding accounting policy.

(9) The methodologies for determining fair value of the Company's invested assets are described in note 1 and note 4(g).

(b) Other invested assets

Other invested assets include investments in associates and joint ventures which were accounted for using the equity method of accounting as follows.

As at December 31,	2016 Carrying value	2016 % of total	2015 Carrying value	2015 % of total
Leveraged leases	**$ 3,369**	**58**	$ 3,549	70
Timber and agriculture	**430**	**8**	423	9
Real estate	**419**	**7**	370	7
Other	**1,562**	**27**	714	14
Total	**$ 5,780**	**100**	$ 5,056	100

The Company's share of profit and dividends from these investments for the year ended December 31, 2016 were $252 and $17, respectively (2015 – $23 and $14, respectively).

(c) Investment income

For the year ended December 31, 2016	FVTPL	AFS	Other[1]	Total	Yields[2]
Cash and short-term securities					**0.7%**
Interest income	**$ 7**	**$ 117**	**$ –**	**$ 124**	
Gains (losses)[3]	**18**	**(18)**	**–**	**–**	
Debt securities					**4.7%**
Interest income	**5,051**	**588**	**–**	**5,639**	
Gains (losses)[3]	**1,658**	**548**	**–**	**2,206**	
Recovery (impairment loss), net	**(18)**	**–**	**–**	**(18)**	
Public equities					**10.6%**
Dividend income	**534**	**58**	**–**	**592**	
Gains (losses)[3]	**1,008**	**201**	**–**	**1,209**	
Impairment loss	**–**	**(48)**	**–**	**(48)**	
Mortgages					**4.1%**
Interest income	**–**	**–**	**1,667**	**1,667**	
Gains (losses)[3]	**–**	**–**	**81**	**81**	
Provision, net	**–**	**–**	**(7)**	**(7)**	
Private placements					**5.4%**
Interest income	**–**	**–**	**1,494**	**1,494**	
Gains (losses)[3]	**–**	**–**	**17**	**17**	
Impairment loss, net	**–**	**–**	**(50)**	**(50)**	
Policy loans	**–**	**–**	**358**	**358**	**6.1%**
Loans to Bank clients					**3.9%**
Interest income	**–**	**–**	**68**	**68**	
Real estate					**4.9%**
Rental income, net of depreciation[4]	**–**	**–**	**523**	**523**	
Gains (losses)[3]	**–**	**–**	**160**	**160**	
Derivatives					**n/a**
Interest income, net	**1,115**	**–**	**(33)**	**1,082**	
Gains (losses)[3]	**(2,597)**	**–**	**–**	**(2,597)**	
Other invested assets					**10.3%**
Interest income	**–**	**–**	**103**	**103**	
Oil and gas, timber, agriculture and other income	**–**	**–**	**1,162**	**1,162**	
Gains (losses)[3]	**634**	**1**	**207**	**842**	
Impairment loss, net	**–**	**–**	**(83)**	**(83)**	
Total investment income	**$ 7,410**	**$ 1,447**	**$ 5,667**	**$ 14,524**	**4.7%**
Investment income					
Interest income	**$ 6,173**	**$ 703**	**$ 3,657**	**$ 10,533**	**3.4%**
Dividend, rental and other income	**534**	**58**	**1,685**	**2,277**	**0.7%**
Impairments and provisions for loan losses	**(18)**	**(48)**	**(140)**	**(206)**	**(0.1%)**
Other	**(6)**	**707**	**85**	**786**	**0.2%**
	6,683	**1,420**	**5,287**	**13,390**	
Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on macro equity hedges					
Debt securities	**1,657**	**5**	**–**	**1,662**	**0.5%**
Public equities	**963**	**22**	**–**	**985**	**0.3%**
Mortgages	**–**	**–**	**80**	**80**	**0.0%**
Private placements	**–**	**–**	**12**	**12**	**0.0%**
Real estate	**–**	**–**	**128**	**128**	**0.0%**
Other invested assets	**688**	**–**	**160**	**848**	**0.3%**
Derivatives, including macro equity hedging program	**(2,581)**	**–**	**–**	**(2,581)**	**(0.8%)**
	727	**27**	**380**	**1,134**	
Total investment income	**$ 7,410**	**$ 1,447**	**$ 5,667**	**$ 14,524**	**4.7%**

For the year ended December 31, 2015	FVTPL	AFS	Other[1]	Total	Yields[2]
Cash and short-term securities					1.8%
Interest income	$ 10	$ 92	$ –	$ 102	
Gains (losses)[3]	(13)	220	–	207	
Debt securities					1.0%
Interest income	4,849	529	–	5,378	
Gains (losses)[3]	(3,969)	106	–	(3,863)	
Recovery (impairment loss), net	(13)	4	–	(9)	
Public equities					1.0%
Dividend income	434	59	–	493	
Gains (losses)[3]	(551)	257	–	(294)	
Impairment loss	–	(32)	–	(32)	
Mortgages					4.7%
Interest income	–	–	1,758	1,758	
Gains (losses)[3]	–	–	279	279	
Private placements					5.6%
Interest income	–	–	1,375	1,375	
Gains (losses)[3]	–	–	97	97	
Impairment loss, net	–	–	(37)	(37)	
Policy loans	–	–	388	388	6.1%
Loans to Bank clients					3.9%
Interest income	–	–	69	69	
Provision, net	–	–	(1)	(1)	
Real estate					11.5%
Rental income, net of depreciation[4]	–	–	509	509	
Gains (losses)[3]	–	–	946	946	
Derivatives					n/a
Interest income, net	964	–	(32)	932	
Gains (losses)[3]	(394)	–	(118)	(512)	
Other invested assets					3.4%
Interest income	–	–	112	112	
Oil and gas, timber, agriculture and other income	–	–	891	891	
Gains (losses)[3]	111	3	55	169	
Impairment loss, net	(3)	–	(551)	(554)	
Total investment income	$ 1,425	$ 1,238	$ 5,740	$ 8,403	2.9%
Investment income					
Interest income	$ 5,823	$ 621	$ 3,670	$ 10,114	3.4%
Dividend, rental and other income	434	59	1,400	1,893	0.6%
Impairments and provisions for loan losses	(16)	(28)	(589)	(633)	(0.2%)
Other	(376)	549	(82)	91	0.0%
	5,865	1,201	4,399	11,465	
Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on macro equity hedges					
Debt securities	(3,969)	12	–	(3,957)	(1.3%)
Public equities	(538)	25	–	(513)	(0.2%)
Mortgages	–	–	278	278	0.1%
Private placements	–	–	95	95	0.0%
Real estate	–	–	980	980	0.3%
Other invested assets	249	–	106	355	0.1%
Derivatives, including macro equity hedging program	(182)	–	(118)	(300)	(0.1%)
	(4,440)	37	1,341	(3,062)	
Total investment income	$ 1,425	$ 1,238	$ 5,740	$ 8,403	2.9%

(1) Primarily includes assets classified as loans and carried at amortized cost, own use property, investment property, derivative and hedging instruments in cash flow hedging relationships, equity method accounted investments, oil and gas investments, and leveraged leases.
(2) Yields are based on income and are calculated using the geometric average of assets held at carrying value during the reporting year.
(3) Includes net realized gains (losses) as well as net unrealized gains (losses) for financial instruments at FVTPL, real estate investment properties, and other invested assets measured at fair value. Also includes net realized gains (losses) for financial instruments at AFS and other invested assets carried at amortized cost.
(4) Rental income from investment properties is net of direct operating expenses and includes net market rental income on own use properties.

(d) Investment expenses

The following table presents total investment expenses of the Company.

For the years ended December 31,	2016	2015
Related to invested assets	**$ 581**	$ 572
Related to segregated, mutual and other funds	**1,065**	1,043
Total investment expenses	**$ 1,646**	$ 1,615

(e) Investment properties

The following table identifies the amounts included in investment income relating to investment properties.

For the years ended December 31,	2016	2015
Rental income from investment properties	**$ 1,204**	$ 1,164
Direct operating expenses of investment properties that generated rental income	**(764)**	(719)
Total	**$ 440**	$ 445

(f) Mortgage securitization

The Company securitizes certain insured and uninsured fixed and variable rate residential mortgages and Home Equity Lines of Credit ("HELOC") through creation of mortgage-backed securities under the Canadian Mortgage Bond Program ("CMB"), as well as through a HELOC securitization program.

Benefits received from the securitization include interest spread between the asset and associated liability. There are no expected credit losses on mortgages that have been securitized under the Canada Mortgage and Housing Corporation ("CMHC") sponsored CMB and the Platinum Canadian Mortgage Trust ("PCMT") HELOC securitization programs as they are insured by CMHC and other third-party insurance programs against borrowers' default. Mortgages securitized in the Platinum Canadian Mortgage Trust II ("PCMT II") program are uninsured.

Cash flows received from the underlying securitized assets/mortgages are used to settle the related secured borrowing liability. For CMB transactions receipts of principal are deposited into a trust account for settlement of the liability at time of maturity. These transferred assets and related cash flows cannot be transferred or used for other purposes. For the HELOC transactions, investors are entitled to periodic interest payments and the remaining cash receipts of principal are allocated to the Company (the "Seller") during the revolving period of the deal and are accumulated for settlement during an accumulation period, or repaid to the investor monthly during a reduction period, based on the terms of the note.

The carrying amount of securitized assets reflecting the Company's continuing involvement with the mortgages and the associated liabilities is as follows.

As at December 31, 2016	Securitized assets			
Securitization program	Securitized mortgages	Restricted cash and short-term securities	Total	Secured borrowing liabilities[2]
HELOC securitization[1]	**$ 1,762**	**$ 8**	**$ 1,770**	**$ 1,750**
CMB securitization	**1,018**	**–**	**1,018**	**1,032**
Total	**$ 2,780**	**$ 8**	**$ 2,788**	**$ 2,782**

As at December 31, 2015	Securitized assets			
	Securitized mortgages	Restricted cash and short-term securities	Total	Secured borrowing liabilities[2]
HELOC securitization[1]	$ 1,500	$ 8	$ 1,508	$ 1,500
CMB securitization	436	–	436	436
Total	$ 1,936	$ 8	$ 1,944	$ 1,936

(1) Manulife Bank, an MFC subsidiary, securitizes a portion of its HELOC receivables through Platinum Canadian Mortgage Trust ("PCMT"), and Platinum Canadian Mortgage Trust II ("PCMT II"). PCMT funds the purchase of the co-ownership interests from Manulife Bank by issuing term notes collateralized by an underlying pool of Canada Mortgage and Housing Corporation ("CMHC") insured HELOCs to institutional investors. PCMT II funds the purchase of the co-ownership interests from Manulife Bank by issuing term notes collateralized by an underlying pool of uninsured HELOCs to institutional investors. The restricted cash balance for the HELOC securitization reflects a cash reserve fund established in relation to the transactions. The reserve will be drawn upon only in the event of insufficient cash flows from the underlying HELOCs to satisfy the secured borrowing liability.

(2) The secured borrowing liabilities primarily comprise of Series 2011-1 notes with a floating rate which are expected to mature on December 15, 2021, and the Series 2016-1 notes with a floating rate which are expected to mature on May 15, 2022. Manulife Bank also securitizes insured amortizing mortgages under the National Housing Act Mortgage-Backed Securities ("NHA MBS") program sponsored by CMHC. Manulife Bank participates in the CMB program by selling NHA MBS securities to Canada Housing Trust ("CHT"), as a source of fixed rate funding.

Fair value of the securitized assets as at December 31, 2016 was $2,821 (2015 – $1,964) and the fair value of the associated liabilities was $2,776 (2015 – $1,937).

(g) Fair value measurement

The following table presents fair value of the Company's invested assets and segregated funds net assets, measured at fair value in the Consolidated Statements of Financial Position and categorized by hierarchy.

As at December 31, 2016	Total fair value	Level 1	Level 2	Level 3
Cash and short-term securities				
FVTPL	**$ 269**	**$ –**	**$ 269**	**$ –**
AFS	**11,705**	**–**	**11,705**	**–**
Other	**3,177**	**3,177**	**–**	**–**
Debt securities[1]				
FVTPL				
Canadian government and agency	**18,030**	**–**	**16,392**	**1,638**
U.S. government and agency	**13,971**	**–**	**13,169**	**802**
Other government and agency	**18,629**	**–**	**18,199**	**430**
Corporate	**87,374**	**2**	**84,174**	**3,198**
Residential mortgage/asset-backed securities	**10**	**–**	**8**	**2**
Commercial mortgage/asset-backed securities	**680**	**–**	**255**	**425**
Other securitized assets	**2,196**	**–**	**2,153**	**43**
AFS				
Canadian government and agency	**6,715**	**–**	**6,470**	**245**
U.S. government and agency	**13,333**	**–**	**13,323**	**10**
Other government and agency	**2,312**	**–**	**2,260**	**52**
Corporate	**5,041**	**–**	**4,791**	**250**
Residential mortgage/asset-backed securities	**65**	**–**	**64**	**1**
Commercial mortgage/asset-backed securities	**123**	**–**	**48**	**75**
Other securitized assets	**143**	**–**	**141**	**2**
Public equities				
FVTPL	**16,531**	**16,524**	**0**	**7**
AFS	**2,965**	**2,963**	**2**	**–**
Real estate – investment property [2]	**12,756**	**–**	**–**	**12,756**
Other invested assets [3]	**14,849**	**–**	**–**	**14,849**
Segregated funds net assets[4]	**315,177**	**278,066**	**32,537**	**4,574**
Total	**$ 546,051**	**$ 300,732**	**$ 205,960**	**$ 39,359**

As at December 31, 2015	Total fair value	Level 1	Level 2	Level 3
Cash and short-term securities				
FVTPL	$ 574	$ –	$ 574	$ –
AFS	13,548	–	13,548	–
Other	3,763	3,763	–	–
Debt securities[1]				
FVTPL				
Canadian government and agency	16,965	–	15,299	1,666
U.S. government and agency	15,964	–	15,119	845
Other government and agency	17,895	–	17,483	412
Corporate	80,269	2	76,296	3,971
Residential mortgage/asset-backed securities	27	–	12	15
Commercial mortgage/asset-backed securities	718	–	207	511
Other securitized assets	2,052	–	2,004	48
AFS				
Canadian government and agency	4,318	–	4,165	153
U.S. government and agency	12,688	–	12,675	13
Other government and agency	1,688	–	1,645	43
Corporate	4,925	–	4,607	318
Residential mortgage/asset-backed securities	49	–	41	8
Commercial mortgage/asset-backed securities	123	–	27	96
Other securitized assets	146	–	141	5
Public equities				
FVTPL	14,689	14,686	2	1
AFS	2,294	2,292	2	–
Real estate – investment property [2]	13,968	–	–	13,968
Other invested assets [3]	12,977	–	–	12,977
Segregated funds net assets[4]	313,249	277,779	30,814	4,656
Total	$ 532,889	$ 298,522	$ 194,661	$ 39,706

[1] The debt securities included in Level 3 consist primarily of maturities greater than 30 years for which the Treasury yield curve is not observable and is extrapolated, as well as debt securities where only unobservable single quoted broker prices are provided.

[2] For investment property, the significant unobservable inputs are capitalization rates (ranging from 3.75% to 9.75% during the year and ranging from 3.75% to 9.50% for the year 2015) and terminal capitalization rates (ranging from 4.1% to 10.00% during the year and ranging from 4.5% to 9.75% during the year 2015). Holding

other factors constant, a lower capitalization or terminal capitalization rate will tend to increase the fair value of an investment property. Changes in fair value based on variations in unobservable inputs generally cannot be extrapolated because the relationship between the directional changes of each input is not usually linear.

(3) Other invested assets measured at fair value are held primarily in power and infrastructure and timber sectors. The significant inputs used in the valuation of the Company's power and infrastructure investments are primarily future distributable cash flows, terminal values and discount rates. Holding other factors constant, an increase to future distributable cash flows or terminal values would tend to increase the fair value of a power and infrastructure investment, while an increase in the discount rate would have the opposite effect. Discount rates during the year ranged from 9.63% to 16.0% (2015 – ranged from 10.05% to 16.0%). Disclosure of distributable cash flow and terminal value ranges are not meaningful given the disparity in estimates by project. The significant inputs used in the valuation of the Company's investments in timberland are timber prices and discount rates. Holding other factors constant, an increase to timber prices would tend to increase the fair value of a timberland investment, while an increase in the discount rates would have the opposite effect. Discount rates during the year ranged from 5.0% to 7.5% (2015 – ranged from 5.0% to 7.5%). A range of prices for timber is not meaningful as the market price depends on factors such as property location and proximity to markets and export yards.

(4) Segregated funds net assets are measured at fair value. The Company's Level 3 segregated funds assets are predominantly invested in timberland properties value as described above.

For invested assets not measured at fair value in the Consolidated Statements of Financial Position, the following tables disclose the summarized fair value information categorized by hierarchy, together with the related carrying values.

As at December 31, 2016	Carrying value	Total fair value	Level 1	Level 2	Level 3
Mortgages[1]	**$ 44,193**	**$ 45,665**	**$ –**	**$ –**	**$ 45,665**
Private placements[2]	**29,729**	**31,459**	**–**	**25,699**	**5,760**
Policy loans[3]	**6,041**	**6,041**	**–**	**6,041**	**–**
Loans to Bank clients[4]	**1,745**	**1,746**	**–**	**1,746**	**–**
Real estate – own use property [5]	**1,376**	**2,524**	**–**	**–**	**2,524**
Other invested assets[6]	**7,911**	**8,254**	**–**	**–**	**8,254**
Total invested assets disclosed at fair value	**$ 90,995**	**$ 95,689**	**$ –**	**$ 33,486**	**$ 62,203**

As at December 31, 2015	Carrying value	Total fair value	Level 1	Level 2	Level 3
Mortgages[1]	$ 43,818	$ 45,307	$ –	$ –	$ 45,307
Private placements[2]	27,578	29,003	–	23,629	5,374
Policy loans[3]	5,912	5,912	–	5,912	–
Loans to Bank clients[4]	1,778	1,782	–	1,782	–
Real estate – own use property [5]	1,379	2,457	–	–	2,457
Other invested assets[6]	7,401	7,381	–	–	7,381
Total invested assets disclosed at fair value	$ 87,866	$ 91,842	$ –	$ 31,323	$ 60,519

(1) Fair value of commercial mortgages is derived through an internal valuation methodology using both observable and unobservable inputs. Unobservable inputs include credit assumptions and liquidity spread adjustments. Fair value of fixed-rate residential mortgages is determined using the discounted cash flow method. Inputs used for valuation are primarily comprised of prevailing interest rates and prepayment rates, if applicable. Fair value of variable-rate residential mortgages is assumed to be their carrying value.

(2) Fair value of private placements is derived through an internal valuation methodology using both observable and unobservable inputs. Unobservable inputs include credit assumptions and liquidity spread adjustments. Private placements are classified within Level 2 unless the liquidity adjustment constitutes a significant price impact, in which case the securities are classified as Level 3.

(3) Fair value of policy loans is equal to their unpaid principal balances.

(4) Fair value of fixed-rate loans to Bank clients is determined using the discounted cash flow method. Inputs used for valuation are primarily comprised of current interest rates. Fair value of variable-rate loans is assumed to be their carrying value.

(5) Fair value of own use real estate and the level of the fair value hierarchy are calculated in accordance with the methodologies described for real estate – investment property in note 1.

(6) Other invested assets disclosed at fair value primarily include leveraged leases, oil and gas properties and equity method accounted other invested assets. Fair value of leveraged leases is shown at their carrying values as fair value is not routinely calculated on these investments. Fair value for oil and gas properties is determined using external appraisals based on discounted cash flow methodology. Inputs used in valuation are primarily comprised of forecasted price curves, planned production, as well as capital expenditures, and operating costs. Fair value of equity method accounted other invested assets is determined using a variety of valuation techniques including discounted cash flows and market comparable approaches. Inputs vary based on the specific investment.

Transfers between Level 1 and Level 2

The Company's policy is to record transfers of assets and liabilities between Level 1 and Level 2 at their fair values as at the end of each reporting period, consistent with the date of the determination of fair value. Assets are transferred out of Level 1 when they are no longer transacted with sufficient frequency and volume in an active market. During the year ended December 31, 2016, the Company transferred nil (2015 – nil) of assets measured at fair value from Level 1 to Level 2. Conversely, assets are transferred from Level 2 to Level 1 when transaction volume and frequency are indicative of an active market. The Company transferred nil (2015 – nil) of assets from Level 2 to Level 1 during the year ended December 31, 2016.

For segregated funds net assets, the Company had $8 transfers from Level 1 to Level 2 for the year ended December 31, 2016 (2015 – nil). The Company had nil transfers from Level 2 to Level 1 for the year ended December 31, 2016 (2015 – $43).

Invested assets and segregated funds net assets measured at fair value on the Consolidated Statements of Financial Position using significant unobservable inputs (Level 3)

The Company classifies the fair values of invested assets and segregated funds net assets as Level 3 if there are no observable markets for these assets or, in the absence of active markets, the majority of the inputs used to determine fair value are based on the

Company's own assumptions about market participant assumptions. The Company prioritizes the use of market-based inputs over entity-based assumptions in determining Level 3 fair values and, therefore, the gains and losses in the tables below include changes in fair value due to both observable and unobservable factors.

The following tables present a roll forward of all invested assets and segregated funds net assets measured at fair value using significant unobservable inputs (Level 3) for the years ended December 31, 2016 and 2015.

For the year ended December 31, 2016	Balance as at January 1, 2016	Net realized / unrealized gains (losses) included in net income[1]	Net realized / unrealized gains (losses) included in AOCI[2]	Purchases[3]	Sales[4]	Settlements	Transfer into Level 3[5]	Transfer out of Level 3[5]	Currency movement	**Balance as at December 31, 2016**	Change in unrealized gains (losses) on assets still held
Debt securities											
FVTPL											
Canadian government & agency	**$ 1,666**	**$ (16)**	**$ –**	**$ 233**	**$ (49)**	**$ –**	**$ –**	**$ (196)**	**$ –**	**$ 1,638**	**$ (62)**
U.S. government & agency	**845**	**9**	**–**	**39**	**–**	**–**	**–**	**(70)**	**(21)**	**802**	**10**
Other government & agency	**412**	**(2)**	**–**	**122**	**(41)**	**(30)**	**–**	**(1)**	**(30)**	**430**	**(4)**
Corporate	**3,971**	**(74)**	**–**	**634**	**(158)**	**(165)**	**58**	**(1,015)**	**(53)**	**3,198**	**(44)**
Residential mortgage/asset-backed securities	**15**	**(1)**	**–**	**–**	**(11)**	**(1)**	**–**	**–**	**–**	**2**	**1**
Commercial mortgage/asset-backed securities	**511**	**(4)**	**–**	**132**	**(56)**	**(4)**	**–**	**(146)**	**(8)**	**425**	**(4)**
Other securitized assets	**48**	**(1)**	**–**	**10**	**(1)**	**(9)**	**–**	**(4)**	**–**	**43**	**(1)**
	7,468	**(89)**	**–**	**1,170**	**(316)**	**(209)**	**58**	**(1,432)**	**(112)**	**6,538**	**(104)**
AFS											
Canadian government & agency	**153**	**36**	**(47)**	**199**	**(96)**	**–**	**–**	**–**	**–**	**245**	**–**
U.S. government & agency	**13**	**–**	**–**	**–**	**–**	**–**	**–**	**(3)**	**–**	**10**	**–**
Other government & agency	**43**	**–**	**–**	**18**	**(6)**	**–**	**–**	**–**	**(3)**	**52**	**–**
Corporate	**318**	**(2)**	**(5)**	**29**	**(32)**	**(3)**	**–**	**(50)**	**(5)**	**250**	**–**
Residential mortgage/asset-backed securities	**8**	**(1)**	**1**	**–**	**(6)**	**–**	**–**	**–**	**(1)**	**1**	**–**
Commercial mortgage/asset-backed securities	**96**	**–**	**–**	**19**	**–**	**(1)**	**–**	**(37)**	**(2)**	**75**	**–**
Other securitized assets	**5**	**–**	**2**	**–**	**–**	**(1)**	**–**	**(4)**	**–**	**2**	**–**
	636	**33**	**(49)**	**265**	**(140)**	**(5)**	**–**	**(94)**	**(11)**	**635**	**–**
Public equities											
FVTPL	**1**	**–**	**–**	**6**	**–**	**–**	**–**	**–**	**–**	**7**	**–**
AFS	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
	1	**–**	**–**	**6**	**–**	**–**	**–**	**–**	**–**	**7**	**–**
Real estate – investment property	**13,968**	**163**	**–**	**681**	**(1,782)**	**–**	**–**	**–**	**(274)**	**12,756**	**197**
Other invested assets	**12,977**	**786**	**9**	**2,171**	**(76)**	**(685)**	**–**	**–**	**(333)**	**14,849**	**847**
	26,945	**949**	**9**	**2,852**	**(1,858)**	**(685)**	**–**	**–**	**(607)**	**27,605**	**1,044**
Segregated funds net assets	**4,656**	**92**	**–**	**356**	**(312)**	**(19)**	**(12)**	**(105)**	**(82)**	**4,574**	**93**
Total	**$ 39,706**	**$ 985**	**$ (40)**	**$ 4,649**	**$ (2,626)**	**$ (918)**	**$ 46**	**$ (1,631)**	**$ (812)**	**$ 39,359**	**$ 1,033**

For the year ended December 31, 2015	Balance as at January 1, 2015	Net realized / unrealized gains (losses) included in net income[1]	Net realized / unrealized gains (losses) included in AOCI[2]	Purchases[3]	Sales[4]	Settlements	Transfer into Level 3[5]	Transfer out of Level 3[5]	Currency movement	Balance as at December 31, 2015	Change in unrealized gains (losses) on assets still held
Debt securities											
FVTPL											
Canadian government & agency	$ 1,006	$ (267)	$ –	$ 2,753	$ (839)	$ –	$ –	$ (987)	$ –	$ 1,666	$ (317)
U.S. government & agency	808	(52)	–	–	(15)	–	–	(35)	139	845	(52)
Other government & agency	437	5	–	54	(83)	(7)	–	(6)	12	412	4
Corporate	3,150	(313)	–	1,574	(96)	(91)	53	(588)	282	3,971	(279)
Residential mortgage/asset-backed securities	133	1	–	–	(122)	(22)	1	–	24	15	9
Commercial mortgage/asset-backed securities	577	(18)	–	141	(157)	(85)	–	(43)	96	511	(26)
Other securitized assets	61	–	–	–	(13)	(18)	6	–	12	48	–
	6,172	(644)	–	4,522	(1,325)	(223)	60	(1,659)	565	7,468	(661)
AFS											
Canadian government & agency	884	62	76	466	(728)	–	–	(607)	–	153	–
U.S. government & agency	12	–	(1)	–	–	–	–	–	2	13	–
Other government & agency	54	–	(1)	10	(17)	(1)	–	(1)	(1)	43	–
Corporate	234	(1)	62	28	(11)	(15)	16	(5)	10	318	–
Residential mortgage/asset-backed securities	28	2	(1)	–	(20)	(7)	–	–	6	8	–
Commercial mortgage/asset-backed securities	83	1	14	19	(21)	(12)	–	(3)	15	96	–
Other securitized assets	13	–	–	–	(5)	(11)	5	–	3	5	–
	1,308	64	149	523	(802)	(46)	21	(616)	35	636	–
Public equities											
FVTPL	2	(1)	–	–	–	–	–	–	–	1	(1)
AFS	–	–	–	2	(2)	–	–	–	–	–	–
	2	(1)	–	2	(2)	–	–	–	–	1	(1)
Real estate – investment property	9,270	1,000	–	2,645	(106)	–	–	–	1,159	13,968	988
Other invested assets	10,231	177	(1)	2,067	(537)	(625)	–	–	1,665	12,977	(57)
	19,501	1,177	(1)	4,712	(643)	(625)	–	–	2,824	26,945	931
Segregated funds net assets	2,591	265	–	2,134	(821)	8	5	–	474	4,656	248
Total	$ 29,574	$ 861	$ 148	$ 11,893	$ (3,593)	$ (886)	$ 86	$ (2,275)	$ 3,898	$ 39,706	$ 517

(1) These amounts, except for the amount related to segregated funds net assets, are included in net investment income on the Consolidated Statements of Income.
(2) These amounts are included in AOCI on the Consolidated Statements of Financial Position.
(3) Purchases in 2015 include assets acquired from Standard Life.
(4) Sales in 2016 include $1,011 of U.S. commercial real estate sold to the Manulife U.S. REIT in Singapore, an associate of the Company which is a structured entity based on unitholder voting rights. The Company provides management services to the REIT and owns approximately 9.5% of its equity.
(5) For assets that are transferred into and/or out of Level 3, the Company uses the fair value of the assets at the beginning of the year.

Transfers into Level 3 primarily result from securities that were impaired during the year or securities where a lack of observable market data (versus the previous period) resulted in reclassifying assets into Level 3. Transfers from Level 3 primarily result from observable market data now being available for the entire term structure of the debt security.

Note 5 Derivative and Hedging Instruments

Derivatives are financial contracts, the value of which is derived from underlying interest rates, foreign exchange rates, other financial instruments, commodity prices or indices. The Company uses derivatives including swaps, forward and futures agreements, and options to manage current and anticipated exposures to changes in interest rates, foreign exchange rates, commodity prices and equity market prices, and to replicate permissible investments.

Swaps are over-the-counter ("OTC") contractual agreements between the Company and a third party to exchange a series of cash flows based upon rates applied to a notional amount. For interest rate swaps, counterparties generally exchange fixed or floating interest rate payments based on a notional value in a single currency. Cross currency swaps involve the exchange of principal amounts between parties as well as the exchange of interest payments in one currency for the receipt of interest payments in another currency. Total return swaps are contracts that involve the exchange of payments based on changes in the values of a reference asset, including any returns such as interest earned on these assets, in return for amounts based on reference rates specified in the contract.

Forward and futures agreements are contractual obligations to buy or sell a financial instrument, foreign currency or other underlying commodity on a predetermined future date at a specified price. Forward contracts are OTC contracts negotiated between counterparties, whereas futures agreements are contracts with standard amounts and settlement dates that are traded on regulated exchanges.

Options are contractual agreements whereby the holder has the right, but not the obligation, to buy (call option) or sell (put option) a security, exchange rate, interest rate, or other financial instrument at a predetermined price/rate within a specified time.

See variable annuity dynamic hedging strategy in the “Risk Management” section of the Company’s 2016 MD&A for an explanation of the Company’s dynamic hedging strategy for its variable annuity product guarantees.

(a) Fair value of derivatives

The pricing models used to value OTC derivatives are based on market standard valuation methodologies and the inputs to these models are consistent with what a market participant would use when pricing the instruments. Derivative valuations can be affected by changes in interest rates, currency exchange rates, financial indices, credit spreads, default risk (including the counterparties to the contract), and market volatility. The significant inputs to the pricing models for most OTC derivatives are inputs that are observable or can be corroborated by observable market data and are classified as Level 2. Inputs that are observable generally include interest rates, foreign currency exchange rates and interest rate curves. However, certain OTC derivatives may rely on inputs that are significant to the fair value that are not observable in the market or cannot be derived principally from, or corroborated by, observable market data and these derivatives are classified as Level 3. Inputs that are unobservable generally include broker quotes, volatilities and inputs that are outside of the observable portion of the interest rate curve or other relevant market measures. These unobservable inputs may involve significant management judgment or estimation. Even though unobservable, these inputs are based on assumptions deemed appropriate given the circumstances and consistent with what market participants would use when pricing such instruments. The Company’s use of unobservable inputs is limited and the impact on derivative fair values does not represent a material amount as evidenced by the limited amount of Level 3 derivatives. The credit risk of both the counterparty and the Company are considered in determining the fair value for all OTC derivatives after taking into account the effects of netting agreements and collateral arrangements.

The gross notional amount and the fair value of derivative contracts by the underlying risk exposure for derivatives in qualifying hedging and derivatives not designated in qualifying hedging relationships are summarized in the following table.

As at December 31,		**2016**			2015		
		Notional	Fair value		Notional	Fair value	
Type of hedge	Instrument type	amount	Assets	Liabilities	amount	Assets	Liabilities
Qualifying hedge accounting relationships							
Fair value hedges	Interest rate swaps	**$ 2,158**	**$ –**	**$ 477**	$ 2,077	$ 1	$ 553
	Foreign currency swaps	**91**	**1**	**3**	95	1	3
Cash flow hedges	Foreign currency swaps	**1,285**	**–**	**447**	826	–	476
	Forward contracts	**255**	**–**	**23**	351	–	43
	Equity contracts	**126**	**21**	**1**	98	–	3
Total derivatives in qualifying hedge accounting relationships		**3,915**	**22**	**951**	3,447	2	1,078
Derivatives not designated in qualifying hedge accounting relationships							
	Interest rate swaps	**281,188**	**21,900**	**10,878**	315,230	22,771	11,935
	Interest rate futures	**11,616**	**–**	**–**	9,455	–	–
	Interest rate options	**9,390**	**376**	**–**	5,887	200	–
	Foreign currency swaps	**12,226**	**347**	**1,645**	9,382	331	1,758
	Currency rate futures	**4,729**	**–**	**–**	5,746	–	–
	Forward contracts	**15,411**	**340**	**644**	13,393	520	241
	Equity contracts	**14,989**	**669**	**33**	11,251	438	38
	Credit default swaps	**662**	**18**	**–**	748	10	–
	Equity futures	**16,072**	**–**	**–**	19,553	–	–
Total derivatives not designated in qualifying hedge accounting relationships		**366,283**	**23,650**	**13,200**	390,645	24,270	13,972
Total derivatives		**$ 370,198**	**$ 23,672**	**$ 14,151**	$ 394,092	$ 24,272	$ 15,050

Fair value of derivative instruments is summarized by term to maturity in the following tables. Fair values shown do not incorporate the impact of master netting agreements. Refer to note 10.

	Term to maturity				
As at December 31, 2016	Less than 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
Derivative assets	**$ 467**	**$ 680**	**$ 719**	**$ 21,806**	**$ 23,672**
Derivative liabilities	**593**	**595**	**511**	**12,452**	**14,151**

	Term to maturity				
As at December 31, 2015	Less than 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
Derivative assets	$ 362	$ 689	$ 593	$ 22,628	$ 24,272
Derivative liabilities	298	676	632	13,444	15,050

As at December 31, 2016	Remaining term to maturity (notional amounts)				Fair value				
	Under 1 year	1 to 5 years	Over 5 years	Total	Positive	Negative	Net	Credit risk equivalent[1]	Risk-weighted amount[2]
Interest rate contracts									
OTC swap contracts	**$ 13,244**	**$ 37,395**	**$ 164,252**	**$ 214,891**	**$ 19,327**	**$ (10,154)**	**$ 9,173**	**$ 10,205**	**$ 1,493**
Cleared swap contracts	**717**	**4,786**	**62,952**	**68,455**	**3,507**	**(2,117)**	**1,390**	**–**	**–**
Forward contracts	**7,229**	**6,143**	**873**	**14,245**	**326**	**(629)**	**(303)**	**192**	**29**
Futures	**11,616**	**–**	**–**	**11,616**	**–**	**–**	**–**	**–**	**–**
Options purchased	**483**	**2,927**	**5,980**	**9,390**	**376**	**–**	**376**	**458**	**70**
Subtotal	**33,289**	**51,251**	**234,057**	**318,597**	**23,536**	**(12,900)**	**10,636**	**10,855**	**1,592**
Foreign exchange									
Swap contracts	**425**	**3,917**	**9,259**	**13,601**	**346**	**(2,120)**	**(1,774)**	**1,491**	**181**
Forward contracts	**1,257**	**165**	**–**	**1,422**	**13**	**(38)**	**(25)**	**62**	**9**
Futures	**4,729**	**–**	**–**	**4,729**	**–**	**–**	**–**	**–**	**–**
Credit derivatives	**47**	**615**	**–**	**662**	**18**	**–**	**18**	**–**	**–**
Equity contracts									
Swap contracts	**3,107**	**192**	**–**	**3,299**	**64**	**(35)**	**29**	**495**	**54**
Futures	**16,072**	**–**	**–**	**16,072**	**–**	**–**	**–**	**–**	**–**
Options purchased	**6,007**	**5,809**	**–**	**11,816**	**626**	**(2)**	**624**	**2,735**	**358**
Subtotal including accrued interest	**64,933**	**61,949**	**243,316**	**370,198**	**24,603**	**(15,095)**	**9,508**	**15,638**	**2,194**
Less accrued interest	**–**	**–**	**–**	**–**	**931**	**(944)**	**(13)**	**–**	**–**
Total	**$ 64,933**	**$ 61,949**	**$ 243,316**	**$ 370,198**	**$ 23,672**	**$ (14,151)**	**$ 9,521**	**$ 15,638**	**$ 2,194**

As at December 31, 2015	Remaining term to maturity (notional amounts)				Fair value				
	Under 1 year	1 to 5 years	Over 5 years	Total	Positive	Negative	Net	Credit risk equivalent[1]	Risk-weighted amount[2]
Interest rate contracts									
OTC swap contracts	$ 14,646	$ 33,625	$ 172,579	$ 220,850	$ 20,006	$ (10,684)	$ 9,322	$ 10,680	$ 1,555
Cleared swap contracts	7,160	22,043	67,255	96,458	3,828	(2,739)	1,089	–	–
Interest rate forwards	3,145	6,851	1,695	11,691	503	(212)	291	252	38
Futures	9,455	–	–	9,455	–	–	–	–	–
Options purchased	–	–	5,886	5,886	199	–	199	373	56
Subtotal	34,406	62,519	247,415	344,340	24,536	(13,635)	10,901	11,305	1,649
Foreign exchange									
Swap contracts	711	2,740	6,851	10,302	333	(2,255)	(1,922)	1,298	162
Forward contracts	1,739	315	–	2,054	17	(73)	(56)	112	15
Futures	5,746	–	–	5,746	–	–	–	–	–
Credit derivatives	298	450	–	748	10	–	10	–	–
Equity contracts									
Swap contracts	2,280	124	–	2,404	14	(22)	(8)	404	44
Futures	19,553	–	–	19,553	–	–	–	–	–
Options purchased	4,205	4,740	–	8,945	422	(18)	404	2,184	285
Subtotal including accrued interest	68,938	70,888	254,266	394,092	25,332	(16,003)	9,329	15,303	2,155
Less accrued interest	–	–	–	–	1,060	(953)	107	–	–
Total	$ 68,938	$ 70,888	$ 254,266	$ 394,092	$ 24,272	$ (15,050)	$ 9,222	$ 15,303	$ 2,155

(1) Credit risk equivalent is the sum of replacement cost and the potential future credit exposure. Replacement cost represents the current cost of replacing all contracts with a positive fair value. The amounts take into consideration legal contracts that permit offsetting of positions. The potential future credit exposure is calculated based on a formula prescribed by OSFI.
(2) Risk-weighted amount represents the credit risk equivalent, weighted according to the creditworthiness of the counterparty, as prescribed by OSFI.

The total notional value of $370 billion (2015 – $394 billion) includes $177 billion (2015 – $225 billion) related to derivatives utilized in the Company's variable annuity guarantee dynamic hedging and macro equity risk hedging programs. As a result of the Company's variable annuity hedging practices, a large number of trades are in offsetting positions, resulting in materially lower net fair value exposure to the Company than what the gross notional amount would suggest.

The following table presents the fair value of derivative contracts categorized by hierarchy.

As at December 31, 2016	Total fair value	Level 1	Level 2	Level 3
Derivative assets				
Interest rate contracts	**$ 22,602**	**$ –**	**$ 22,045**	**$ 557**
Foreign exchange contracts	**362**	**–**	**361**	**1**
Equity contracts	**690**	**–**	**182**	**508**
Credit default swaps	**18**	**–**	**18**	**–**
Total derivative assets	**$ 23,672**	**$ –**	**$ 22,606**	**$ 1,066**
Derivative liabilities				
Interest rate contracts	**$ 11,984**	**$ –**	**$ 11,114**	**$ 870**
Foreign exchange contracts	**2,133**	**–**	**2,133**	**–**
Equity contracts	**34**	**–**	**1**	**33**
Total derivative liabilities	**$ 14,151**	**$ –**	**$ 13,248**	**$ 903**

As at December 31, 2015	Total fair value	Level 1	Level 2	Level 3
Derivative assets				
Interest rate contracts	$ 23,475	$ –	$ 22,767	$ 708
Foreign exchange contracts	349	–	339	10
Equity contracts	438	–	79	359
Credit default swaps	10	–	10	–
Total derivative assets	$ 24,272	$ –	$ 23,195	$ 1,077
Derivative liabilities				
Interest rate contracts	$ 12,700	$ –	$ 11,997	$ 703
Foreign exchange contracts	2,309	–	2,309	–
Equity contracts	41	–	17	24
Total derivative liabilities	$ 15,050	$ –	$ 14,323	$ 727

The following table presents a roll forward for net derivative contracts measured at fair value using significant unobservable inputs (Level 3).

For the years ended December 31,	2016	2015
Balance at the beginning of the year	**$ 350**	$ 1,105
Net realized / unrealized gains (losses) included in:		
Net income[1]	**47**	(477)
OCI[2]	**40**	(20)
Purchases	**373**	47
Sales	**(522)**	(301)
Transfers		
Into Level 3[3]	**–**	–
Out of Level 3[3]	**(116)**	(100)
Currency movement	**(9)**	96
Balance at the end of the year	**$ 163**	$ 350
Change in unrealized gains (losses) on instruments still held	**$ 145**	$ (386)

(1) These amounts are included in investment income on the Consolidated Statements of Income.
(2) These amounts are included in AOCI on the Consolidated Statements of Financial Position.
(3) For items that are transferred into and out of Level 3, the Company uses the fair value of the items at the end and beginning of the period, respectively. Transfers into Level 3 occur when the inputs used to price the assets and liabilities lack observable market data (versus the previous year). Transfers out of Level 3 occur when the inputs used to price the assets and liabilities become available from observable market data.

(b) Hedging relationships

The Company uses derivatives for economic hedging purposes. In certain circumstances, these hedges also meet the requirements for hedge accounting. Risk management strategies eligible for hedge accounting are designated as fair value hedges, cash flow hedges or net investment hedges, as described below.

Fair value hedges

The Company uses interest rate swaps to manage its exposure to changes in the fair value of fixed rate financial instruments caused by changes in interest rates. The Company also uses cross currency swaps to manage its exposure to foreign exchange rate fluctuations, interest rate fluctuations, or both.

The Company recognizes gains and losses on derivatives and the related hedged items in fair value hedges in investment income. These investment gains (losses) are shown in the following table.

Derivatives in qualifying fair value hedging relationships

For the year ended December 31, 2016	Hedged items in qualifying fair value hedging relationships	Gains (losses) recognized on derivatives	Gains (losses) recognized for hedged items	Ineffectiveness recognized in investment income
Interest rate swaps	Fixed rate assets	**$ (52)**	**$ 30**	**$ (22)**
	Fixed rate liabilities	**(1)**	**1**	**–**
Foreign currency swaps	Fixed rate assets	**–**	**2**	**2**
Total		**$ (53)**	**$ 33**	**$ (20)**

For the year ended December 31, 2015		Gains (losses) recognized on derivatives	Gains (losses) recognized for hedged items	Ineffectiveness recognized in investment income
Interest rate swaps	Fixed rate assets	$ (147)	$ 105	$ (42)
	Fixed rate liabilities	(2)	2	–
Foreign currency swaps	Fixed rate assets	14	(13)	1
Total		$ (135)	$ 94	$ (41)

Cash flow hedges

The Company uses interest rate swaps to hedge the variability in cash flows from variable rate financial instruments and forecasted transactions. The Company also uses cross currency swaps and foreign currency forward contracts to hedge the variability from foreign currency financial instruments and foreign currency expenses. Total return swaps are used to hedge the variability in cash flows associated with certain stock-based compensation awards. Inflation swaps are used to reduce inflation risk generated from inflation-indexed liabilities.

The effects of derivatives in cash flow hedging relationships on the Consolidated Statements of Income and the Consolidated Statements of Comprehensive Income are shown in the following table.

Derivatives in qualifying cash flow hedging relationships

For the year ended December 31, 2016	Hedged items in qualifying cash flow hedging relationships	Gains (losses) deferred in AOCI on derivatives	Gains (losses) reclassified from AOCI into investment income	Ineffectiveness recognized in investment income
Interest rate swaps	Forecasted liabilities	**$ –**	**$ (18)**	**$ –**
Foreign currency swaps	Fixed rate assets	**(4)**	**–**	**–**
	Floating rate liabilities	**47**	**23**	**–**
	Fixed rate liabilities	**(15)**	**(8)**	**–**
Forward contracts	Forecasted expenses	**7**	**(14)**	**–**
Equity contracts	Stock-based compensation	**39**	**(1)**	**–**
Non-derivative financial instrument	Forecasted expenses	**–**	**3**	**–**
Total		**$ 74**	**$ (15)**	**$ –**

For the year ended December 31, 2015		Gains (losses) deferred in AOCI on derivatives	Gains (losses) reclassified from AOCI into investment income	Ineffectiveness recognized in investment income
Interest rate swaps	Forecasted liabilities	$ (9)	$ (15)	$ –
Foreign currency swaps	Fixed rate assets	2	(1)	–
	Floating rate liabilities	(195)	(126)	–
Forward contracts	Forecasted expenses	(44)	(4)	–
Equity contracts	Stock-based compensation	(7)	14	–
Non-derivative financial instrument	Forecasted expenses	3	–	–
Total		$ (250)	$ (132)	$ –

The Company anticipates that net losses of approximately $31 will be reclassified from AOCI to net income within the next 12 months. The maximum time frame for which variable cash flows are hedged is 20 years.

Hedges of net investments in foreign operations

The Company primarily uses forward currency contracts, cross currency swaps and non-functional currency denominated debt to manage its foreign currency exposures to net investments in foreign operations.

The effects of derivatives in net investment hedging relationships on the Consolidated Statements of Income and the Consolidated Statements of Other Comprehensive Income are shown in the following table.

Hedging instruments in net investment hedging relationships

For the year ended December 31, 2016	Gains (losses) deferred in AOCI on derivatives	Gains (losses) reclassified from AOCI into investment income	Ineffectiveness recognized in investment income
Non-functional currency denominated debt	**$ (25)**	**$ –**	**$ –**
Total	**$ (25)**	**$ –**	**$ –**

For the year ended December 31, 2015	Gains (losses) deferred in AOCI on derivatives	Gains (losses) reclassified from AOCI into investment income	Ineffectiveness recognized in investment income
Non-functional currency denominated debt	$ (158)	$ –	$ –
Total	$ (158)	$ –	$ –

(c) Derivatives not designated in qualifying hedge accounting relationships

Derivatives used in portfolios supporting insurance contract liabilities are generally not designated in qualifying hedge accounting relationships because the change in the value of the insurance contract liabilities economically hedged by these derivatives is also recorded through net income. Given the changes in fair value of these derivatives and related hedged risks are recognized in investment income as they occur, they generally offset the change in hedged risk to the extent the hedges are economically effective. Interest rate and cross currency swaps are used in the portfolios supporting insurance contract liabilities to manage duration and currency risks.

The effects of derivatives not designated in qualifying hedge accounting relationships on the Consolidated Statements of Income are shown in the following table.

Derivatives not designated in qualifying hedge accounting relationships

For the years ended December 31,	2016	2015
Investment income (loss)		
Interest rate swaps	**$ (141)**	$ 978
Interest rate futures	**(26)**	(83)
Interest rate options	**(11)**	23
Foreign currency swaps	**(14)**	(590)
Currency rate futures	**263**	(97)
Forward contracts	**(88)**	(371)
Equity futures	**(2,387)**	(36)
Equity contracts	**(171)**	(194)
Credit default swaps	**1**	(5)
Total	**$ (2,574)**	$ (375)

(d) Embedded derivatives

Certain insurance contracts contain features that are classified as embedded derivatives and are measured separately at FVTPL including reinsurance contracts related to guaranteed minimum income benefits and contracts containing certain credit and interest rate features.

Certain reinsurance contracts related to guaranteed minimum income benefits are considered to contain embedded derivatives requiring separate measurement at FVTPL as the financial component contained in the reinsurance contracts does not contain significant insurance risk. As at December 31, 2016, reinsurance ceded guaranteed minimum income benefits had a fair value of $1,408 (2015 – $1,574) and reinsurance assumed guaranteed minimum income benefits had a fair value of $119 (2015 – $127). Claims recovered under reinsurance ceded contracts offset the claims expenses and claims paid on the reinsurance assumed are reported as contract benefits.

The Company's credit and interest rate embedded derivatives promise to pay the returns on a portfolio of assets to the contract holder. These embedded derivatives contain a credit and interest rate risk that is a financial risk embedded in the underlying insurance contract. As at December 31, 2016, these embedded derivatives had a fair value of $218 (2015 – $170).

Other financial instruments classified as embedded derivatives but exempt from separate measurement at fair value include variable universal life and variable life products, minimum guaranteed credited rates, no lapse guarantees, guaranteed annuitization options, CPI indexing of benefits, and segregated fund minimum guarantees other than reinsurance ceded/assumed guaranteed minimum income benefits. These embedded derivatives are measured and reported within insurance contract liabilities and are exempt from separate fair value measurement as they contain insurance risk and/or are closely related to the insurance host contract.

Note 6 Income Taxes

(a) Components of the income tax expense (recovery)

Income tax recognized in the Consolidated Statements of Income:

For the years ended December 31,	2016	2015
Current tax		
Current year	**$ 659**	$ 615
Adjustments to prior year[1]	**(228)**	56
	431	671
Deferred tax		
Change related to temporary differences	**(222)**	(293)
Effects of changes in tax rates	**(13)**	(50)
Income tax expense	**$ 196**	$ 328

[1] Adjustments relating to closure of multiple taxation years.

Income tax recognized in Other Comprehensive Income ("OCI"):

For the years ended December 31,	2016	2015
Current income tax recovery	**$ (72)**	$ (139)
Deferred income tax recovery	**(25)**	(104)
Income tax recovery	**$ (97)**	$ (243)

Income tax recognized directly in Equity:

For the years ended December 31,	2016	2015
Current income tax expense (recovery)	**$ (2)**	$ 50
Deferred income tax recovery	**(2)**	(48)
Income tax expense (recovery)	**$ (4)**	$ 2

The effective income tax rate reflected in the Consolidated Statements of Income varies from the Canadian tax rate of 26.75 per cent for the year ended December 31, 2016 (2015 – 26.75 per cent) and the reasons are shown below.

Reconciliation of income tax expense

For the years ended December 31,	2016	2015
Income before income taxes	**$ 3,329**	$ 2,618
Income tax expense at Canadian statutory tax rate	**$ 890**	$ 700
Increase (decrease) in income taxes due to:		
Tax-exempt investment income	**(229)**	(231)
Differences in tax rate on income not subject to tax in Canada	**(366)**	(104)
General business tax credits	**(4)**	(21)
Recovery of unrecognized tax losses of prior years	**(10)**	(38)
Adjustments to taxes related to prior years	**(151)**	(32)
Tax losses and temporary differences not recognized as deferred taxes	**22**	–
Other differences	**44**	54
Income tax expense	**$ 196**	$ 328

(b) Current tax receivable and payable

As at December 31, 2016, the Company has approximately $446 of current tax receivable included in other assets (2015 – $198) and a current tax payable of $387 included in other liabilities (2015 – $527).

(c) Deferred tax assets and liabilities

The following table presents deferred tax assets and liabilities of the Company.

As at December, 31	2016	2015
Deferred tax assets	**$ 4,439**	$ 4,067
Deferred tax liabilities	**(1,359)**	(1,235)
Net deferred tax assets	**$ 3,080**	$ 2,832

The following table presents significant components of the Company's deferred tax assets and liabilities.

As at December 31, 2016	Balance January 1, 2016	Acquired in Business combinations	Recognized in Income Statement	Recognized in Other Comprehensive Income	Recognized in equity	Translation and other	Balance at December 31, 2016
Loss carry forwards	**$ 1,493**	**$ –**	**$ (515)**	**$ –**	**$ –**	**$ (36)**	**$ 942**
Actuarial liabilities	**9,448**	**–**	**244**	**(5)**	**(116)**	**(205)**	**9,366**
Pensions and post-employment benefits	**329**	**–**	**100**	**(79)**	**–**	**2**	**352**
Tax credits	**750**	**–**	**147**	**–**	**–**	**(22)**	**875**
Accrued interest	**121**	**–**	**(100)**	**–**	**–**	**(4)**	**17**
Real estate	**(1,812)**	**–**	**373**	**–**	**–**	**43**	**(1,396)**
Securities and other investments	**(6,160)**	**–**	**(258)**	**113**	**112**	**172**	**(6,021)**
Sale of investments	**(200)**	**–**	**37**	**–**	**–**	**–**	**(163)**
Goodwill and intangible assets	**(1,138)**	**–**	**58**	**–**	**–**	**21**	**(1,059)**
Other	**1**	**–**	**149**	**(4)**	**6**	**15**	**167**
Total	**$ 2,832**	**$ –**	**$ 235**	**$ 25**	**$ 2**	**$ (14)**	**$ 3,080**

As at December 31, 2015	Balance January 1, 2015	Acquired in Business combinations	Recognized in Income Statement	Recognized in Other Comprehensive Income	Recognized in equity	Translation and other	Balance at December 31, 2015
Loss carry forwards	$ 1,662	$ –	$ (472)	$ –	$ 2	$ 301	$ 1,493
Actuarial liabilities	5,935	315	2,374	–	37	787	9,448
Pensions and post-employment benefits	277	58	(6)	4	–	(4)	329
Tax credits	535	–	105	–	–	110	750
Accrued interest	105	–	(3)	–	–	19	121
Real estate	(1,162)	(97)	(363)	(1)	–	(189)	(1,812)
Securities and other investments	(4,519)	(62)	(818)	74	10	(845)	(6,160)
Sale of investments	(214)	(19)	34	–	–	(1)	(200)
Goodwill and intangible assets	(773)	(263)	16	–	–	(118)	(1,138)
Other	255	20	(524)	27	(1)	224	1
Total	$ 2,101	$ (48)	$ 343	$ 104	$ 48	$ 284	$ 2,832

The total deferred tax assets as at December 31, 2016 of $4,439 (2015 – $4,067) include $4,403 (2015 – $4,025) where the Company has suffered losses in either the current or preceding year and where the recognition is dependent on future taxable profits in the relevant jurisdictions and feasible management actions.

As at December 31, 2016, tax loss carryforwards available were approximately $3,556 (2015 – $4,963) of which $3,386 expire between the years 2017 and 2036 while $170 have no expiry date, and capital loss carryforwards available were approximately $69 (2015 – $8) and have no expiry date. A $942 (2015 – $1,493) tax benefit related to these tax loss carryforwards has been recognized as a deferred tax asset as at December 31, 2016, and a benefit of $139 (2015 – $66) has not been recognized. In addition, the Company has approximately $1,039 (2015 – $818) of tax credit carryforwards which will expire between the years 2017 and 2036 of which a benefit of $164 (2015 – $68) has not been recognized.

The total deferred tax liability as at December 31, 2016 was $1,359 (2015 – $1,235). This amount includes the deferred tax liability of consolidated entities. The aggregate amount of taxable temporary differences associated with the Company's own investments in subsidiaries is not included in the Consolidated Financial Statements and was $6,958 (2015 – $5,902).

Note 7 Goodwill and Intangible Assets

(a) Carrying amounts of goodwill and intangible assets

As at December 31, 2016	Balance, January 1	Additions[3]/ Disposals[4]	Amortization expense	Effect of changes in foreign exchange rates	Balance, December 31
Goodwill	**$ 5,685**	**$ 256**	**$ n/a**	**$ (57)**	**$ 5,884**
Indefinite life intangible assets					
Brand	**831**	**–**	**n/a**	**(26)**	**805**
Fund management contracts and other [1]	**723**	**76**	**n/a**	**(14)**	**785**
	1,554	**76**	**n/a**	**(40)**	**1,590**
Finite life intangible assets[2]					
Distribution networks	**726**	**450**	**200**	**117**	**1,093**
Customer relationships	**947**	**79**	**53**	**(4)**	**969**
Software	**396**	**229**	**126**	**(5)**	**494**
Other	**76**	**6**	**5**	**–**	**77**
	2,145	**764**	**384**	**108**	**2,633**
Total intangible assets	**3,699**	**840**	**384**	**68**	**4,223**
Total goodwill and intangible assets	**$ 9,384**	**$ 1,096**	**$ 384**	**$ 11**	**$ 10,107**

As at December 31, 2015	Balance, January 1	Additions/ Disposals	Amortization expense	Effect of changes in foreign exchange rates	Balance, December 31
Goodwill	$ 3,181	$ 2,172	$ n/a	$ 332	$ 5,685
Indefinite life intangible assets					
Brand	696	–	n/a	135	831
Fund management contracts and other [1]	533	123	n/a	67	723
	1,229	123	n/a	202	1,554
Finite life intangible assets[2]					
Distribution networks	675	10	43	84	726
Customer relationships	36	945	50	16	947
Software	314	227	161	16	396
Other	26	50	3	3	76
	1,051	1,232	257	119	2,145
Total intangible assets	2,280	1,355	257	321	3,699
Total goodwill and intangible assets	$ 5,461	$ 3,527	$ 257	$ 653	$ 9,384

[1] For the fund management contracts, the significant CGUs to which these were allocated and their carrying values were John Hancock Investments and Retirement Plan Services with $393 (2015 – $405) and Canadian Wealth (excluding Manulife Bank of Canada) with $273 (2015 – $273).

[2] Gross carrying amount of finite life intangible assets was $1,363 for distribution networks, $1,142 for customer relationships, $1,581 for software and $133 for other (2015 – $999, $1,067, $1,563 and $127, respectively).

[3] Acquisitions of Standard Chartered's MPF business in Hong Kong and Transamerica's broker-dealer business in the USA led to additions of goodwill of $194 and $59 and intangible assets of $193 and $26, respectively. Commencement of sales through the DBS relationship led to recognition of $536 of distribution networks.

[4] Includes impairments of distribution networks for discontinued products of $150 in the U.S. Division.

(b) Impairment testing of goodwill

In the fourth quarter of 2016, the Company completed its annual goodwill impairment testing by determining the recoverable amounts of its businesses using valuation techniques discussed below or based on the most recent detailed similar calculations made in a prior period (refer to note 1(f) and 7(c)).

The Company has determined that there is no impairment of goodwill in 2016 and 2015.

The Company allocates goodwill to cash-generating units ("CGU") or groups of CGUs. Factors considered when identifying the Company's CGUs include how the Company is organized to interact with customers, how products are presented and sold, and where interdependencies exist. The carrying value of goodwill for all CGUs with goodwill balances is shown in the table below.

As at December 31, 2016 CGU or Group of CGUs	Balance, January 1	Additions/ disposals	Effect of changes in foreign exchange rates	Balance, December 31
Asia (excluding Hong Kong and Japan)	**$ 166**	**$ –**	**$ (6)**	**$ 160**
Hong Kong	**–**	**194**	**–**	**194**
Japan Insurance and Wealth	**404**	**–**	**(1)**	**403**
Canadian Individual Life	**155**	**–**	**–**	**155**
Canadian Affinity Markets	**83**	**–**	**–**	**83**
Canadian Wealth (excluding Manulife Bank)	**1,089**	**–**	**–**	**1,089**
Canadian Group Benefits and Group Retirement Solutions	**1,789**	**–**	**–**	**1,789**
International Group Program	**93**	**–**	**(3)**	**90**
John Hancock Insurance	**378**	**59**	**(9)**	**428**
John Hancock Investments and Retirement Plan Services	**1,234**	**3**	**(37)**	**1,200**
Corporate and Other	**294**	**–**	**(1)**	**293**
Total	**$ 5,685**	**$ 256**	**$ (57)**	**$ 5,884**

As at December 31, 2015 CGU or Group of CGUs	Balance, January 1	Additions/ disposals	Effect of changes in foreign exchange rates	Balance, December 31
Asia (excluding Hong Kong and Japan)	$ 143	$ –	$ 23	$ 166
Japan Insurance and Wealth	339	–	65	404
Canadian Individual Life	155	–	–	155
Canadian Affinity Markets	83	–	–	83
Canadian Wealth (excluding Manulife Bank)	750	339	–	1,089
Canadian Group Benefits and Group Retirement Solutions	826	963	–	1,789
International Group Program	78	–	15	93
John Hancock Insurance	317	–	61	378
John Hancock Investments and Retirement Plan Services	420	659	155	1,234
Corporate and Other	70	211	13	294
Total	$ 3,181	$ 2,172	$ 332	$ 5,685

The valuation techniques, significant assumptions and sensitivities, where applicable, applied in the goodwill impairment testing are described below.

(c) Valuation techniques

The recoverable value of each CGU or group of CGUs was based on value-in-use ("VIU") for the U.S. (John Hancock) based CGUs, the Canadian Individual Life CGU and the Japan Insurance and Wealth CGU. For all other CGUs, fair value less costs to sell ("FVLCS") was used. When determining if a CGU is impaired, the Company compares its recoverable amount to the allocated capital for that unit, which is aligned with the Company's internal reporting practices.

Under the VIU approach, an embedded appraisal value is determined from a projection of future distributable earnings derived from both the in-force business and new business expected to be sold in the future, and therefore, reflects the economic value for each CGU's or group of CGUs' profit potential under a set of assumptions. This approach requires assumptions including sales and revenue growth rates, capital requirements, interest rates, equity returns, mortality, morbidity, policyholder behaviour, tax rates and discount rates.

Under the FVLCS approach, the Company determines the fair value of the CGU or group of CGUs using an earnings-based approach which incorporated forecasted earnings, excluding interest and equity market impacts and normalized new business expenses multiplied by an earnings multiple derived from the observable price-to-earnings multiples of comparable financial institutions. The price-to-earnings multiples used by the Company for testing ranged from 10.3 to 13.8 (2015 – 9.5 to 12.9).

(d) Significant assumptions

To calculate the embedded value, the Company discounted projected earnings from in-force contracts and valued 10 years of new business growing at expected plan levels, consistent with the periods used for forecasting long-term businesses such as insurance. In arriving at its projections, the Company considered past experience, economic trends such as interest rates, equity returns and product mix as well as industry and market trends. Where growth rate assumptions for new business cash flows were used in the embedded value calculations, they ranged from negative five per cent to 15 per cent (2015 – zero per cent to 17 per cent).

Interest rate assumptions are based on prevailing market rates at the valuation date.

Tax rates applied to the projections include the impact of internal reinsurance treaties and amounted to 26.8 per cent, 35 per cent and 28.2 per cent (2015 – 26.8 per cent, 35 per cent and 28.9 per cent) for the Canadian, U.S. and Japan jurisdictions, respectively.

Tax assumptions are sensitive to changes in tax laws as well as assumptions about the jurisdictions in which profits are earned. It is possible that actual tax rates could differ from those assumed.

Discount rates assumed in determining the value-in-use for applicable CGUs or groups of CGUs ranged from nine per cent to 14 per cent on an after-tax basis or 11 per cent to 15 per cent on a pre-tax basis (2015 – nine per cent to 14 per cent on an after-tax basis or 11 per cent to 15 per cent on a pre-tax basis).

The key assumptions described above may change as economic and market conditions change, which may lead to impairment charges in the future. Changes in discount rates and cash flow projections used in the determination of embedded values or reductions in market-based earnings multiples may result in impairment charges in the future which could be material.

Note 8 Insurance Contract Liabilities and Reinsurance Assets

(a) Insurance contract liabilities and reinsurance assets

Insurance contract liabilities are reported gross of reinsurance ceded and the ceded liabilities are reported separately as a reinsurance asset. Insurance contract liabilities include actuarial liabilities as well as benefits payable, provision for unreported claims and policyholder amounts on deposit. The components of gross and net insurance contract liabilities are shown below.

As at December 31,	2016	2015
Gross insurance contract liabilities	**$ 284,778**	$ 273,228
Gross benefits payable and provision for unreported claims	**3,309**	3,046
Gross policyholder amounts on deposit	**9,418**	9,014
Gross insurance contract liabilities	**297,505**	285,288
Reinsurance assets	**(34,952)**	(35,426)
Net insurance contract liabilities	**$ 262,553**	$ 249,862

Net insurance contract liabilities represent the amount which, together with estimated future premiums and net investment income, will be sufficient to pay estimated future benefits, policyholder dividends and refunds, taxes (other than income taxes) and expenses on policies in-force net of reinsurance premiums and recoveries.

Net insurance contract liabilities are determined using CALM as required by the Canadian Institute of Actuaries.

The determination of net insurance contract liabilities is based on an explicit projection of cash flows using current assumptions for each material cash flow item. Investment returns are projected using the current asset portfolios and projected reinvestment strategies.

Each assumption is based on the best estimate adjusted by a margin for adverse deviation. For fixed income returns, this margin is established by scenario testing a range of prescribed and company-developed scenarios consistent with Canadian Actuarial Standards of Practice. For all other assumptions, this margin is established by directly adjusting the best estimate assumption.

Cash flows used in the net insurance contract liabilities valuation adjust the gross policy cash flows to reflect projected cash flows from ceded reinsurance. The cash flow impact of ceded reinsurance varies depending upon the amount of reinsurance, the structure of reinsurance treaties, the expected economic benefit from treaty cash flows and the impact of margins for adverse deviation. Gross insurance contract liabilities are determined by discounting gross policy cash flows using the same discount rate as the net CALM model discount rate.

The reinsurance asset is determined by taking the difference between the gross insurance contract liabilities and the net insurance contract liabilities. The reinsurance asset represents the benefit derived from reinsurance arrangements in force at the date of the Consolidated Statements of Financial Position.

The period used for the projection of cash flows is the policy lifetime for most individual insurance contracts. For other types of contracts, a shorter projection period may be used, with the contract generally ending at the earlier of the first renewal date on or after the Consolidated Statements of Financial Position date where the Company can exercise discretion in renewing its contractual obligations or terms of those obligations and the renewal or adjustment date that maximizes the insurance contract liabilities. For segregated fund products with guarantees, the projection period is generally set as the period that leads to the largest insurance contract liability. Where the projection period is less than the policy lifetime, insurance contract liabilities may be reduced by an allowance for acquisition expenses expected to be recovered from policy cash flows beyond the projection period used for the liabilities. Such allowances are tested for recoverability using assumptions that are consistent with other components of the actuarial valuation.

(b) Composition

The composition of insurance contract liabilities and reinsurance assets by line of business and reporting segment is as follows.

Gross insurance contract liabilities

As at December 31, 2016	Individual insurance						
	Participating	Non-participating	Annuities and pensions	Other insurance contract liabilities[1]	Total, net of reinsurance ceded	Total reinsurance ceded	Total, gross of reinsurance ceded
Asia division	**$ 29,520**	**$ 18,799**	**$ 3,599**	**$ 2,649**	**$ 54,567**	**$ 880**	**$ 55,447**
Canadian division	**10,974**	**31,790**	**19,620**	**11,000**	**73,384**	**593**	**73,977**
U.S. division	**9,419**	**56,484**	**28,529**	**40,760**	**135,192**	**33,220**	**168,412**
Corporate and Other	**–**	**(833)**	**62**	**181**	**(590)**	**259**	**(331)**
Total, net of reinsurance ceded	**49,913**	**106,240**	**51,810**	**54,590**	**262,553**	**$ 34,952**	**$ 297,505**
Total reinsurance ceded	**13,558**	**12,122**	**8,159**	**1,113**	**34,952**		
Total, gross of reinsurance ceded	**$ 63,471**	**$ 118,362**	**$ 59,969**	**$ 55,703**	**$ 297,505**		

As at December 31, 2015	Individual insurance						
	Participating	Non-participating	Annuities and pensions	Other insurance contract liabilities[1]	Total, net of reinsurance ceded	Total reinsurance ceded	Total, gross of reinsurance ceded
Asia division	$ 27,808	$ 12,518	$ 3,353	$ 2,307	$ 45,986	$ 866	$ 46,852
Canadian division	10,389	29,283	21,253	10,548	71,473	263	71,736
U.S. division	9,743	53,637	30,080	39,446	132,906	33,993	166,899
Corporate and Other	–	(795)	74	218	(503)	304	(199)
Total, net of reinsurance ceded	47,940	94,643	54,760	52,519	249,862	$ 35,426	$ 285,288
Total reinsurance ceded	15,125	10,963	8,226	1,112	35,426		
Total, gross of reinsurance ceded	$ 63,065	$ 105,606	$ 62,986	$ 53,631	$ 285,288		

[1] Other insurance contract liabilities include group insurance and individual and group health including long-term care insurance.

Separate sub-accounts were established for participating policies in-force at the demutualization of MLI and John Hancock Life Insurance Company. These sub-accounts permit this participating business to be operated as separate “closed blocks” of participating policies. As at December 31, 2016, assets and insurance contract liabilities related to these closed blocks of participating policies were $29,108 (2015 – $29,588).

(c) Assets backing insurance contract liabilities, other liabilities and capital

Assets are segmented and matched to liabilities with similar underlying characteristics by product line and major currency. The Company has established target investment strategies and asset mixes for each asset segment supporting insurance contract liabilities which take into account the risk attributes of the liabilities supported by the assets and expectations of market performance. Liabilities with rate and term guarantees are predominantly backed by fixed-rate instruments on a cash flow matching basis for a targeted duration horizon. Longer duration cash flows on these liabilities as well as on adjustable products such as participating life insurance are backed by a broader range of asset classes, including equity and alternative long-duration investments. The Company’s capital is invested in a range of debt and equity investments, both public and private.

Changes in the fair value of assets backing net insurance contract liabilities, that the Company considers to be other than temporary, would have a limited impact on the Company’s net income wherever there is an effective matching of assets and liabilities, as these changes would be substantially offset by corresponding changes in value of actuarial liabilities. The fair value of assets backing net insurance contract liabilities as at December 31, 2016, excluding reinsurance assets, was estimated at $266,119 (2015 – $252,961).

The fair value of assets backing capital and other liabilities as at December 31, 2016 was estimated at $459,256 (2015 – $453,887).

The carrying value of total assets backing net insurance contract liabilities, other liabilities and capital was as follows.

As at December 31, 2016	Individual insurance: Participating	Individual insurance: Non-participating	Annuities and pensions	Other insurance contract liabilities[1]	Other liabilities[2]	Capital[3]	Total
Assets							
Debt securities	**$ 27,473**	**$ 56,765**	**$ 26,331**	**$ 23,012**	**$ 9,965**	**$ 25,076**	**$ 168,622**
Public equities	**8,055**	**5,401**	**213**	**351**	**732**	**4,744**	**19,496**
Mortgages	**2,110**	**10,008**	**8,135**	**5,554**	**18,311**	**75**	**44,193**
Private placements	**3,277**	**10,823**	**7,096**	**7,070**	**1,272**	**191**	**29,729**
Real estate	**2,811**	**6,397**	**1,480**	**2,561**	**613**	**270**	**14,132**
Other	**6,187**	**16,846**	**8,555**	**16,042**	**377,000**	**19,879**	**444,509**
Total	**$ 49,913**	**$ 106,240**	**$ 51,810**	**$ 54,590**	**$ 407,893**	**$ 50,235**	**$ 720,681**

As at December 31, 2015	Individual insurance: Participating	Individual insurance: Non-participating	Annuities and pensions	Other insurance contract liabilities[1]	Other liabilities[2]	Capital[3]	Total
Assets							
Debt securities	$ 26,180	$ 49,111	$ 28,180	$ 23,988	$ 8,766	$ 21,602	$ 157,827
Public equities	7,454	3,897	794	366	769	3,703	16,983
Mortgages	2,219	9,209	8,166	5,600	18,530	94	43,818
Private placements	3,253	10,816	6,322	5,758	1,210	219	27,578
Real estate	3,022	6,068	1,917	2,361	693	1,286	15,347
Other	5,812	15,542	9,381	14,446	373,144	22,993	441,318
Total	$ 47,940	$ 94,643	$ 54,760	$ 52,519	$ 403,112	$ 49,897	$ 702,871

(1) Other insurance contract liabilities include group insurance and individual and group health including long-term care insurance.
(2) Other liabilities are non-insurance contract liabilities which include segregated funds, bank deposits, long-term debt, deferred tax liabilities, derivatives, investment contracts, non-exempt embedded derivatives and other miscellaneous liabilities.
(3) Capital is defined in note 14.

(d) Significant insurance contract liability valuation assumptions

The determination of insurance contract liabilities involves the use of estimates and assumptions. Insurance contract liabilities have two major components: a best estimate amount and a provision for adverse deviation.

Best estimate assumptions

Best estimate assumptions are made with respect to mortality and morbidity, investment returns, rates of policy termination, operating expenses and certain taxes. Actual experience is monitored to ensure that assumptions remain appropriate and assumptions are changed as warranted. Assumptions are discussed in more detail in the following table.

Nature of factor and assumption methodology		Risk management
Mortality and morbidity	Mortality relates to the occurrence of death. Mortality is a key assumption for life insurance and certain forms of annuities. Mortality assumptions are based on the Company's internal experience as well as past and emerging industry experience. Assumptions are differentiated by sex, underwriting class, policy type and geographic market. Assumptions are made for future mortality improvements.	The Company maintains underwriting standards to determine the insurability of applicants. Claim trends are monitored on an ongoing basis. Exposure to large claims is managed by establishing policy retention limits, which vary by market and geographic location. Policies in excess of the limits are reinsured with other companies.
	Morbidity relates to the occurrence of accidents and sickness for insured risks. Morbidity is a key assumption for long-term care insurance, disability insurance, critical illness and other forms of individual and group health benefits. Morbidity assumptions are based on the Company's internal experience as well as past and emerging industry experience and are established for each type of morbidity risk and geographic market. Assumptions are made for future morbidity improvements.	Mortality is monitored monthly and the overall 2016 experience was unfavourable (2015 – unfavourable) when compared to the Company's assumptions. Morbidity is also monitored monthly and the overall 2016 experience was unfavourable (2015 – unfavourable) when compared to the Company's assumptions.

Nature of factor and assumption methodology		Risk management
Investment returns	The Company segments assets to support liabilities by business segment and geographic market and establishes investment strategies for each liability segment. Projected cash flows from these assets are combined with projected cash flows from future asset purchases/sales to determine expected rates of return on these assets for future years. Investment strategies are based on the target investment policies for each segment and the reinvestment returns are derived from current and projected market rates for fixed income investments and a projected outlook for other alternative long-duration assets. Investment return assumptions include expected future asset credit losses on fixed income investments. Credit losses are projected based on past experience of the Company and industry as well as specific reviews of the current investment portfolio. Investment return assumptions for each asset class and geographic market also incorporate expected investment management expenses that are derived from internal cost studies. The costs are attributed to each asset class to develop unitized assumptions per dollar of asset for each asset class and geographic market.	The Company's policy of closely matching asset cash flows with those of the corresponding liabilities is designed to mitigate the Company's exposure to future changes in interest rates. The interest rate risk positions in business segments are monitored on an ongoing basis. Under CALM, the reinvestment rate is developed using interest rate scenario testing and reflects the interest rate risk positions. In 2016, the movement in interest rates negatively (2015 – positively) impacted the Company's net income. This negative impact was driven by reductions in corporate spreads and the impact of risk free interest rate movements on policy liabilities partially offset by reductions in swap spreads. The exposure to credit losses is managed against policies that limit concentrations by issuer, corporate connections, ratings, sectors and geographic regions. On participating policies and some non-participating policies, credit loss experience is passed back to policyholders through the investment return crediting formula. For other policies, premiums and benefits reflect the Company's assumed level of future credit losses at contract inception or most recent contract adjustment date. The Company holds explicit provisions in actuarial liabilities for credit risk including provisions for adverse deviation. In 2016, credit loss experience on debt securities and mortgages was favourable (2015 – favourable) when compared to the Company's assumptions. Equities, real estate and other alternative long-duration assets are used to support liabilities where investment return experience is passed back to policyholders through dividends or credited investment return adjustments. Equities, real estate, oil and gas and other alternative long-duration assets are also used to support long-dated obligations in the Company's annuity and pension businesses and for long-dated insurance obligations on contracts where the investment return risk is borne by the Company. In 2016, investment experience on alternative long-duration assets backing policyholder liabilities was unfavourable (2015 – unfavourable) primarily due to losses on real estate, oil and gas properties and timber and agriculture properties, partially offset by gains on private equities. In 2016, alternative long-duration asset origination exceeded (2015 – exceeded) valuation requirements. In 2016, for the business that is dynamically hedged, segregated fund guarantee experience on residual, non-dynamically hedged market risks was unfavourable (2015 – unfavourable). For the business that is not dynamically hedged, experience on segregated fund guarantees due to changes in the market value of assets under management was also unfavourable (2015 – unfavourable). This excludes the experience on the macro equity hedges. In 2016, investment expense experience was favourable (2015 – favourable) when compared to the Company's assumptions.

Nature of factor and assumption methodology		Risk management
Policyholder behaviour	Policies are terminated through lapses and surrenders, where lapses represent the termination of policies due to non-payment of premiums and surrenders represent the voluntary termination of policies by policyholders. Premium persistency represents the level of ongoing deposits on contracts where there is policyholder discretion as to the amount and timing of deposits. Policy termination and premium persistency assumptions are primarily based on the Company's recent experience adjusted for expected future conditions. Assumptions reflect differences by type of contract within each geographic market.	The Company seeks to design products that minimize financial exposure to lapse, surrender and other policyholder behaviour risk. The Company monitors lapse, surrender and other policyholder behaviour experience. In aggregate, 2016 policyholder behaviour experience was unfavourable (2015 – unfavourable) when compared to the Company's assumptions used in the computation of actuarial liabilities.
Expenses and taxes	Operating expense assumptions reflect the projected costs of maintaining and servicing in-force policies, including associated overhead expenses. The expenses are derived from internal cost studies projected into the future with an allowance for inflation. For some developing businesses, there is an expectation that unit costs will decline as these businesses grow. Taxes reflect assumptions for future premium taxes and other non-income related taxes. For income taxes, policy liabilities are adjusted only for temporary tax timing and permanent tax rate differences on the cash flows available to satisfy policy obligations.	The Company prices its products to cover the expected costs of servicing and maintaining them. In addition, the Company monitors expenses monthly, including comparisons of actual expenses to expense levels allowed for in pricing and valuation. Maintenance expenses for 2016 were unfavourable (2015 – unfavourable) when compared to the Company's assumptions used in the computation of actuarial liabilities. The Company prices its products to cover the expected cost of taxes.
Policyholder dividends, experience rating refunds, and other adjustable policy elements	The best estimate projections for policyholder dividends and experience rating refunds, and other adjustable elements of policy benefits are determined to be consistent with management's expectation of how these elements will be managed should experience emerge consistently with the best estimate assumptions used for mortality and morbidity, investment returns, rates of policy termination, operating expenses and taxes.	The Company monitors policy experience and adjusts policy benefits and other adjustable elements to reflect this experience. Policyholder dividends are reviewed annually for all businesses under a framework of Board-approved policyholder dividend policies.
Foreign currency	Foreign currency risk results from a mismatch of the currency of liabilities and the currency of the assets designated to support these obligations. Where a currency mismatch exists, the assumed rate of return on the assets supporting the liabilities is reduced to reflect the potential for adverse movements in foreign exchange rates.	The Company generally matches the currency of its assets with the currency of the liabilities they support, with the objective of mitigating the risk of loss arising from movements in currency exchange rates.

The Company's practice is to review actuarial assumptions on an annual basis as part of its review of methods and assumptions. Where changes are made to assumptions (refer to note 8(h)), the full impact is recognized in income immediately.

(e) Sensitivity of insurance contract liabilities to changes in non-economic assumptions

The sensitivity of net income attributed to shareholders to changes in non-economic assumptions underlying policy liabilities is shown below, assuming that there is a simultaneous change in the assumption across all business units.

In practice, experience for each assumption will frequently vary by geographic market and business and assumption updates are made on a business/geographic specific basis. Actual results can differ materially from these estimates for a variety of reasons including the interaction among these factors when more than one changes; changes in actuarial and investment return and future investment activity assumptions; changes in business mix, effective tax rates and other market factors; and the general limitations of internal models.

Potential impact on net income attributed to shareholders arising from changes to non-economic assumptions [1]

As at December 31,	Decrease in net income attributable to shareholders 2016	2015
Policy related assumptions		
2% adverse change in future mortality rates [2],[4]		
Products where an increase in rates increases insurance contract liabilities	**$ (400)**	$ (400)
Products where a decrease in rates increases insurance contract liabilities	**(500)**	(500)
5% adverse change in future morbidity rates [3],[4]	**(3,700)**	(3,000)
10% adverse change in future termination rates [4]	**(1,900)**	(2,000)
5% increase in future expense levels	**(500)**	(400)

[1] The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in non-economic assumptions. Experience gains or losses would generally result in changes to future dividends, with no direct impact to shareholders.

[2] An increase in mortality rates will generally increase policy liabilities for life insurance contracts whereas a decrease in mortality rates will generally increase policy liabilities for policies with longevity risk such as payout annuities.

[3] No amounts related to morbidity risk are included for policies where the policy liability provides only for claims costs expected over a short period, generally less than one year, such as Group Life and Health.

[4] The impacts of the sensitivities on long-term care for morbidity, mortality and lapse are assumed to be moderated by partial offsets from the Company's ability to contractually raise premium rates in such events, subject to state regulatory approval.

(f) Provision for adverse deviation assumptions

The assumptions made in establishing insurance contract liabilities reflect expected best estimates of future experience. To recognize the uncertainty in these best estimate assumptions, to allow for possible mis-estimation of and deterioration in experience and to provide a greater degree of assurance that the insurance contract liabilities are adequate to pay future benefits, the Appointed Actuary is required to include a margin in each assumption.

Margins are released into future earnings as the policy is released from risk. Margins for interest rate risk are included by testing a number of scenarios of future interest rates. The margin can be established by testing a limited number of scenarios, some of which are prescribed by the Canadian Actuarial Standards of Practice, and determining the liability based on the worst outcome. Alternatively the margin can be set by testing many scenarios, which are developed according to actuarial guidance. Under this approach the liability would be the average of the outcomes above a percentile in the range prescribed by the Canadian Actuarial Standards of Practice.

Specific guidance is also provided for other risks such as market, credit, mortality and morbidity risks. For other risks which are not specifically addressed by the Canadian Institute of Actuaries, a range is provided of five per cent to 20 per cent of the expected experience assumption. The Company uses assumptions within the permissible ranges, with the determination of the level set taking into account the risk profile of the business. On occasion, in specific circumstances for additional prudence, a margin may exceed the high end of the range, which is permissible under the Canadian Actuarial Standards of Practice. This additional margin would be released if the specific circumstances which led to it being established were to change.

Each margin is reviewed annually for continued appropriateness.

(g) Change in insurance contract liabilities

The change in insurance contract liabilities was a result of the following business activities and changes in actuarial estimates.

For the year ended December 31, 2016	Net actuarial liabilities	Other insurance contract liabilities [1]	Net insurance contract liabilities	Reinsurance assets	Gross insurance contract liabilities
Balance, January 1	**$ 239,812**	**$ 10,050**	**$ 249,862**	**$ 35,426**	**$ 285,288**
New policies[2]	**3,617**	**–**	**3,617**	**294**	**3,911**
Normal in-force movement[2]	**12,579**	**1,094**	**13,673**	**(405)**	**13,268**
Changes in methods and assumptions[2]	**709**	**(54)**	**655**	**699**	**1,354**
Impact of changes in foreign exchange rates	**(4,979)**	**(275)**	**(5,254)**	**(1,062)**	**(6,316)**
Balance, December 31	**$ 251,738**	**$ 10,815**	**$ 262,553**	**$ 34,952**	**$ 297,505**

For the year ended December 31, 2015	Net actuarial liabilities	Other insurance contract liabilities [1]	Net insurance contract liabilities	Reinsurance assets	Gross insurance contract liabilities
Balance, January 1	$ 200,206	$ 9,264	$ 209,470	$ 18,525	$ 227,995
Acquisitions and divestitures[3]	3,897	(861)	3,036	13,691	16,727
New policies[4]	2,205	–	2,205	196	2,401
Normal in-force movement[4]	5,505	231	5,736	(485)	5,251
Changes in methods and assumptions[4]	582	(24)	558	(380)	178
Impact of changes in foreign exchange rates	27,417	1,440	28,857	3,879	32,736
Balance, December 31	$ 239,812	$ 10,050	$ 249,862	$ 35,426	$ 285,288

[1] Other insurance contract liabilities are comprised of benefits payable and provision for unreported claims and policyholder amounts on deposit.

[2] In 2016 the $18,014 increase reported as the change in insurance contract liabilities on the Consolidated Statements of Income primarily consists of changes due to normal in-force movement, new policies and changes in methods and assumptions. These three items in the gross insurance contract liabilities column of this table net to an increase of $18,533, of which $17,529 is included in the Consolidated Statements of Income increase in insurance contract liabilities and $1,004 is included in gross claims and benefits. The Consolidated Statements of Income change in insurance contract liabilities also includes the change in embedded derivatives associated with insurance contracts.

[3] In 2015 the Company acquired the Canadian-based operations of Standard Life and in the USA, NYL assumed 60% of the Company's in-force participating life insurance closed block through net 60% reinsurance agreements.

[4] In 2015 the $7,452 increase reported as the change in insurance contract liabilities on the Consolidated Statements of Income primarily consists of changes due to normal in-force movement, new policies and changes in methods and assumptions. These three items in the gross insurance contract liabilities column of this table net to an increase of $7,830, of which $7,408 is included in the Consolidated Statements of Income increase in insurance contract liabilities, $439 is included in gross claims and benefits and $(17) is related to Life Retrocession insurance contract liabilities sold through a reinsurance agreement in 2011 and is offset in the change in reinsurance assets. The Consolidated Statements of Income change in insurance contract liabilities also includes the change in embedded derivatives associated with insurance contracts.

(h) Actuarial methods and assumptions

A comprehensive review of valuation assumptions and methods is performed annually. The review is designed to reduce the Company's exposure to uncertainty by ensuring assumptions for both asset related and liability related risks remain appropriate. This is accomplished by monitoring experience and updating assumptions which represent a best estimate view of future experience, and margins that are appropriate for the risks assumed. While the assumptions selected represent the Company's current best estimates and assessment of risk, the ongoing monitoring of experience and the economic environment is likely to result in future changes to the valuation assumptions, which could be material.

Annual Review 2016

The 2016 full year review of actuarial methods and assumptions resulted in an increase in insurance and investment contract liabilities of $655, net of reinsurance, and a decrease in net income attributed to shareholders of $453 post-tax.

For the year ended December 31, 2016	Change in gross insurance and investment contract liabilities	Change in net insurance and investment contract liabilities	Change in net income attributed to shareholders (post-tax)
JH Long Term Care triennial review	**$ 696**	**$ 696**	**$ (452)**
Mortality and morbidity updates	**(12)**	**(53)**	**76**
Lapses and policyholder behaviour			
U.S. Variable Annuities guaranteed minimum withdrawal benefit incidence and utilization	**(1,024)**	**(1,024)**	**665**
Other lapses and policyholder behaviour	**516**	**431**	**(356)**
Economic reinvestment assumptions	**459**	**443**	**(313)**
Other updates	**719**	**162**	**(73)**
Net impact	**$ 1,354**	**$ 655**	**$ (453)**

JH Long Term Care triennial review

U.S. Insurance completed a comprehensive long-term care experience study in 2016. This included a review of mortality, morbidity and lapse experience, as well as the reserve for in-force rate increases filed as a result of the 2013 review. In addition, the Company implemented refinements to the modelling of future tax cash flows for long-term care. The net impact of the review was a $452 charge to net income attributed to shareholders.

Expected future claims costs increased primarily due to claims periods being longer than expected in policy liabilities, and a reduction in lapse and mortality rates. This increase in expected future claims costs was partially offset by a number of items, including expected future premium increases resulting from this year's review and a decrease in the margin for adverse deviations related to the rate of inflation embedded in the Company's benefit utilization assumptions.

The review of premium increases assumed in the insurance contract liabilities resulted in a benefit to earnings of $1.0 billion; this includes future premium increases that are due to the 2016 review of morbidity, mortality and lapse assumptions, and outstanding amounts from the Company's 2013 state filings. Premium increases averaging approximately 20 per cent will be sought on the vast majority of the in-force business, excluding the carryover of 2013 amounts requested. The Company's assumptions reflect the estimated timing and amount of state approved premium increases. The actual experience obtaining price increases could be materially different than the Company has assumed, resulting in further increases or decreases in policy liabilities which could be material.

Mortality and morbidity updates

Mortality and morbidity assumptions were updated across several business units to reflect recent experience, including updates to morbidity assumptions for certain medical insurance products in Japan, leading to a $76 benefit to net income attributed to shareholders.

Updates to lapses and policyholder behaviour

U.S. Variable Annuities guaranteed minimum withdrawal benefit incidence and utilization assumptions were updated to reflect recent experience which led to a $665 benefit to net income attributed to shareholders. The Company updated its incidence assumptions to reflect the favourable impact of policyholders taking withdrawals later than expected. This was partially offset by an increase in the Company's utilization assumptions.

In Japan, lapse rates for term life insurance products were increased at certain durations which led to a $228 charge to net income attributed to shareholders. Other updates to lapse and policyholder behavior assumptions were made across several product lines, including term products in Canada, which led to a $128 charge to net income attributed to shareholders.

Updates to economic reinvestment assumptions

The Company updated economic reinvestment assumptions for risk free rates used in the valuation of policy liabilities which resulted in a $313 charge to net income attributed to shareholders. These updates included a ten basis point reduction in the Company's ultimate reinvestment rate ("URR") assumptions and a commensurate change in the calibration criteria for stochastic risk free rates. These updates reflect the fact that interest rates are lower than they were when the current prescribed URR and calibration criteria for stochastic risk free rates were promulgated by the Actuarial Standards Board ("ASB") in 2014. The ASB has indicated that it will update the promulgation periodically, when necessary. The Company expects the promulgation to be updated in 2017 and, if required, it will make further updates to its economic reinvestment assumptions at that time.

Other updates

Other model refinements related to the projection of both asset and liability cash flows across several business units led to a $73 charge to net income attributed to shareholders. This included a charge due to refinements to the Company's CALM models and assumptions offset by a benefit due to refinements to the modelling of future tax cash flows for certain assets in the U.S.

2015 review

In 2015, the completion of the annual review of actuarial methods and assumptions resulted in an increase in insurance and investment contract liabilities of $558 net of reinsurance and a decrease in net income attributed to shareholders of $451.

For the year ended December 31, 2015	Change in gross insurance and investment contract liabilities	Change in net insurance and investment contract liabilities	Change in net income attributed to shareholders (post-tax)
Mortality and morbidity updates	$ (191)	$ (146)	$ 168
Lapses and policyholder behaviour	953	571	(446)
Other updates	(584)	133	(173)
Net impact	$ 178	$ 558	$ (451)

Updates to mortality and morbidity

Assumptions were updated across several business units to reflect recent experience. In Japan, a reduction to the margin for adverse deviations applied to the best estimate morbidity assumptions for certain medical insurance products resulted in a $237 increase in net income attributed to shareholders. The reduction in this margin is a result of emerging experience being aligned with expectations leading to a decrease in the level of conservatism required for this assumption.

Other mortality and morbidity updates led to a $69 decrease in net income attributed to shareholders. This included a refinement to the modelling of mortality improvement on a portion of the Canadian retail insurance business that led to an increase in net income attributed to shareholders. This was more than offset by a review of the Company mortality assumption for some of the JH Annuities business and a number of other updates across several business units.

Updates to lapses and policyholder behaviour

Lapse rates were updated across several business units to reflect recent experience. Lapse rates for JH universal life and variable universal life products were updated which led to a net $235 decrease in net income attributed to shareholders. Lapse rates for low cost universal life products were reduced which led to a decrease in net income attributed to shareholders; this was partially offset by a reduction in lapse rates for the variable universal life products which led to an increase in net income attributed to shareholders.

Other updates to lapse and policyholder behaviour assumptions were made across several product lines including term and whole life insurance products in Japan, which led to a $211 decrease in net income attributed to shareholders.

Other updates

The Company implemented a refinement to the modelling of asset and liability cash flows associated with inflation linked benefit options in the Long Term Care business, which led to a $264 increase in net income attributed to shareholders.

The Company implemented a refinement to the projection of the term policy conversion options in Canadian retail insurance which led to a $200 decrease in net income attributed to shareholders.

Other model refinements related to the projection of both asset and liability cash flows across several business units led to a $237 decrease in net income attributed to shareholders. This included several items such as refinements to the modelling of reinsurance contracts in North America, updates to the future investment expense assumptions, updates to the future ALDA investment return assumptions and updates to certain future expense assumptions in JH Insurance.

(i) Insurance contracts contractual obligations

Insurance contracts give rise to obligations fixed by agreement. As at December 31, 2016, the Company's contractual obligations and commitments relating to insurance contracts are as follows.

Payments due by period	Less than 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
Insurance contract liabilities [1]	**$ 9,913**	**$ 13,490**	**$ 18,071**	**$ 687,753**	**$ 729,227**

[1] Insurance contract liability cash flows include estimates related to the timing and payment of death and disability claims, policy surrenders, policy maturities, annuity payments, minimum guarantees on segregated fund products, policyholder dividends, commissions and premium taxes offset by contractual future premiums on in-force contracts. These estimated cash flows are based on the best estimate assumptions used in the determination of insurance contract liabilities. These amounts are undiscounted and reflect recoveries from reinsurance agreements. Due to the use of assumptions, actual cash flows may differ from these estimates. Cash flows include embedded derivatives measured separately at fair value.

(j) Gross claims and benefits

The following table presents a breakdown of gross claims and benefits.

For the years ended December 31,	2016	2015
Death, disability and other claims	**$ 13,820**	$ 13,130
Maturity and surrender benefits	**6,697**	6,195
Annuity payments	**4,310**	4,211
Policyholder dividends and experience rating refunds	**1,111**	1,106
Net transfers from segregated funds	**(879)**	(881)
Total	**$ 25,059**	$ 23,761

Note 9 Investment Contract Liabilities

Investment contract liabilities are contractual obligations made by the Company that do not contain significant insurance risk and are measured either at fair value or at amortized cost.

(a) Investment contract liabilities measured at fair value

Investment contract liabilities measured at fair value comprise certain investment savings and pension products sold primarily in Hong Kong and China. The carrying value of investment contract liabilities measured at fair value as at December 31, 2016 was $631 (2015 – $785).

The change in investment contract liabilities measured at fair value was a result of the following.

For the years ended December 31,	2016	2015
Balance, January 1	**$ 785**	$ 680
New policies	**53**	52
Changes in market conditions	**(103)**	90
Redemptions, surrenders and maturities	**(83)**	(166)
Impact of changes in foreign exchange rates	**(21)**	129
Balance, December 31	**$ 631**	$ 785

(b) Investment contract liabilities measured at amortized cost

Investment contract liabilities measured at amortized cost comprise several fixed annuity products sold in Canada and the U.S. fixed annuity products considered investment contracts are those that provide guaranteed income payments for a contractually determined period of time and are not contingent on survivorship.

Investment contract liabilities measured at amortized cost are shown below. The fair value associated with these contracts is also shown for comparative purposes.

	2016		2015	
As at December 31,	Amortized cost	Fair value	Amortized cost	Fair value
U.S. fixed annuity products	**$ 1,412**	**$ 1,516**	$ 1,488	$ 1,542
Canadian fixed annuity products	**1,232**	**1,389**	1,224	1,290
Investment contract liabilities	**$ 2,644**	**$ 2,905**	$ 2,712	$ 2,832

The change in investment contract liabilities measured at amortized cost was a result of the following business activities.

For the years ended December 31,	2016	2015
Balance, January 1	**$ 2,712**	$ 1,964
Acquisitions and divestitures[1]	**–**	943
New policy deposits	**112**	64
Interest	**100**	121
Withdrawals	**(235)**	(520)
Fees	**(1)**	(1)
Other	**1**	(127)
Impact of changes in foreign exchange rates	**(45)**	268
Balance, December 31	**$ 2,644**	$ 2,712

[1] In 2015 the Company acquired the Canadian-based operations of Standard Life.

The carrying value of fixed annuity products is amortized at a rate that exactly discounts the projected actual cash flows to the net carrying amount of the liability at the date of issue.

The fair value of fixed annuity products is determined by projecting cash flows according to the contract terms and discounting the cash flows at current market rates adjusted for the Company's own credit standing. All investment contracts were categorized in Level 2 of the fair value hierarchy (2015 – Level 2).

(c) Investment contracts contractual obligations

Investment contracts give rise to obligations fixed by agreement. As at December 31, 2016, the Company's contractual obligations and commitments relating to investment contracts are as follows.

Payments due by period	Less than 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
Investment contract liabilities[1]	**$ 301**	**$ 558**	**$ 519**	**$ 4,197**	**$ 5,575**

[1] Due to the nature of the products, the timing of net cash flows may be before contract maturity. Cash flows are undiscounted.

Note 10 Risk Management

The Company's policies and procedures for managing risk related to financial instruments can be found in the "Risk Management" section of the Company's MD&A for the year ended December 31, 2016. Specifically, these disclosures are included in "Market Risk" and "Liquidity Risk" in this section. These disclosures are in accordance with IFRS 7 "Financial Instruments: Disclosures" and therefore, only the shaded text and tables form an integral part of these Consolidated Financial Statements.

(a) Credit risk

Credit risk is the risk of loss due to the inability or unwillingness of a borrower, or counterparty, to fulfill its payment obligations. Worsening regional and global economic conditions could result in defaults or downgrades and could lead to increased provisions or impairments related to the Company's general fund invested assets, derivative financial instruments and reinsurance and an increase in provisions for future credit impairments to be included in actuarial liabilities.

The Company's exposure to credit risk is managed through risk management policies and procedures which include a defined credit evaluation and adjudication process, delegated credit approval authorities and established exposure limits by borrower, corporate connection, credit rating, industry and geographic region. The Company measures derivative counterparty exposure as net potential credit exposure, which takes into consideration mark-to-market values of all transactions with each counterparty, net of any collateral held, and an allowance to reflect future potential exposure. Reinsurance counterparty exposure is measured reflecting the level of ceded liabilities.

The Company also ensures where warranted, that mortgages, private placements and loans to Bank clients are secured by collateral, the nature of which depends on the credit risk of the counterparty.

An allowance for losses on loans is established when a loan becomes impaired. Allowances for loan losses are calculated to reduce the carrying value of the loans to estimated net realizable value. The establishment of such allowances takes into consideration normal historical credit loss levels and future expectations, with an allowance for adverse deviations. In addition, policy liabilities include general provisions for credit losses from future asset impairments. Impairments are identified through regular monitoring of all credit related exposures, considering such information as general market conditions, industry and borrower specific credit events and any other relevant trends or conditions. Allowances for losses on reinsurance contracts are established when a reinsurance counterparty becomes unable or unwilling to fulfill its contractual obligations. The allowance for loss is based on current recoverable amounts and ceded policy liabilities.

Credit risk associated with derivative counterparties is discussed in note 10(d) and credit risk associated with reinsurance counterparties is discussed in note 10(i).

Credit exposure

The following table outlines the gross carrying amount of financial instruments subject to credit exposure, without taking into account any collateral held or other credit enhancements.

As at December 31,	2016	2015
Debt securities		
FVTPL	**$ 140,890**	$ 133,890
AFS	**27,732**	23,937
Mortgages	**44,193**	43,818
Private placements	**29,729**	27,578
Policy loans	**6,041**	5,912
Loans to Bank clients	**1,745**	1,778
Derivative assets	**23,672**	24,272
Accrued investment income	**2,260**	2,264
Reinsurance assets	**34,952**	35,426
Other financial assets	**4,844**	4,044
Total	**$ 316,058**	$ 302,919

Credit quality

The credit quality of commercial mortgages and private placements is assessed at least annually by using an internal rating based on regular monitoring of credit related exposures, considering both qualitative and quantitative factors.

A provision is recorded when internal risk ratings indicate that a loss represents the most likely outcome. The assets are designated as non-accrual and an allowance is established based on an analysis of the security and repayment sources.

The following table summarizes the credit quality and carrying value of commercial mortgages and private placements.

As at December 31, 2016	AAA	AA	A	BBB	BB	B and lower	Total
Commercial mortgages							
Retail	**$ 97**	**$ 1,620**	**$ 4,391**	**$ 2,085**	**$ –**	**$ 7**	**$ 8,200**
Office	**68**	**1,255**	**3,972**	**1,938**	**55**	**36**	**7,324**
Multi-family residential	**656**	**1,362**	**1,944**	**844**	**–**	**–**	**4,806**
Industrial	**22**	**360**	**1,452**	**831**	**169**	**–**	**2,834**
Other	**428**	**261**	**1,323**	**493**	**60**	**–**	**2,565**
Total commercial mortgages	**1,271**	**4,858**	**13,082**	**6,191**	**284**	**43**	**25,729**
Agricultural mortgages	**–**	**151**	**61**	**469**	**141**	**–**	**822**
Private placements	**1,086**	**4,466**	**10,672**	**11,605**	**936**	**964**	**29,729**
Total	**$ 2,357**	**$ 9,475**	**$ 23,815**	**$ 18,265**	**$ 1,361**	**$ 1,007**	**$ 56,280**

As at December 31, 2015	AAA	AA	A	BBB	BB	B and lower	Total
Commercial mortgages							
Retail	$ 109	$ 1,307	$ 4,419	$ 2,135	$ 10	$ 5	$ 7,985
Office	112	944	3,301	2,444	286	50	7,137
Multi-family residential	862	1,227	1,630	905	–	–	4,624
Industrial	30	303	1,213	1,262	23	–	2,831
Other	487	270	1,083	870	70	–	2,780
Total commercial mortgages	1,600	4,051	11,646	7,616	389	55	25,357
Agricultural mortgages	–	–	230	540	168	–	938
Private placements	1,030	3,886	9,813	10,791	1,113	945	27,578
Total	$ 2,630	$ 7,937	$ 21,689	$ 18,947	$ 1,670	$ 1,000	$ 53,873

The credit quality of residential mortgages and loans to Bank clients is assessed at least annually with the loan being performing or non-performing as the key credit quality indicator.

Full or partial write-offs of loans are recorded when management believes there is no realistic prospect of full recovery. Write-offs, net of recoveries, are deducted from the allowance for credit losses. All impairments are captured in the allowance for credit losses.

The following table summarizes the carrying value of residential mortgages and loans to Bank clients.

	2016			2015		
As at December 31,	Insured	Uninsured	Total	Insured	Uninsured	Total
Residential mortgages						
Performing	**$ 7,574**	**$ 10,050**	**$ 17,624**	$ 8,027	$ 9,478	$ 17,505
Non-performing[1]	**6**	**13**	**19**	7	11	18
Loans to Bank clients						
Performing	**n/a**	**1,743**	**1,743**	n/a	1,778	1,778
Non-performing[1]	**n/a**	**2**	**2**	n/a	–	–
Total	**$ 7,580**	**$ 11,808**	**$ 19,388**	$ 8,034	$ 11,267	$ 19,301

[1] Non-performing refers to assets that are 90 days or more past due if uninsured and 365 days or more if insured.

The carrying value of government-insured mortgages was 19 per cent of the total mortgage portfolio as at December 31, 2016 (2015 – 20 per cent). The majority of these insured mortgages are residential loans as classified in the table above.

Past due or credit impaired financial assets

The Company provides for credit risk by establishing allowances against the carrying value of impaired loans and recognizing impairment losses on AFS debt securities. In addition, the Company reports as impairment certain declines in the fair value of debt securities designated as FVTPL which it deems represent an impairment.

The following table summarizes the carrying value or impaired value, in the case of impaired debt securities, of the Company's financial assets that are considered past due or impaired.

	Past due but not impaired			
As at December 31, 2016	Less than 90 days	90 days and greater	Total	Total impaired
Debt securities				
FVTPL	**$ 90**	**$ –**	**$ 90**	**$ 38**
AFS	**16**	**9**	**25**	**–**
Private placements	**215**	**64**	**279**	**152**
Mortgages and loans to Bank clients	**50**	**20**	**70**	**33**
Other financial assets	**57**	**54**	**111**	**8**
Total	**$ 428**	**$ 147**	**$ 575**	**$ 231**

	Past due but not impaired			
As at December 31, 2015	Less than 90 days	90 days and greater	Total	Total impaired
Debt securities				
FVTPL	$ 92	$ –	$ 92	$ 15
AFS	3	1	4	–
Private placements	214	–	214	114
Mortgages and loans to Bank clients	51	23	74	31
Other financial assets	12	26	38	1
Total	$ 372	$ 50	$ 422	$ 161

The following table summarizes the Company's loans that are considered impaired.

As at December 31, 2016	Gross carrying value	Allowances for losses	Net carrying value
Private placements	**$ 244**	**$ 92**	**$ 152**
Mortgages and loans to Bank clients	**59**	**26**	**33**
Total	**$ 303**	**$ 118**	**$ 185**

As at December 31, 2015	Gross carrying value	Allowances for losses	Net carrying value
Private placements	$ 186	$ 72	$ 114
Mortgages and loans to Bank clients	60	29	31
Total	$ 246	$ 101	$ 145

Allowance for loan losses

For the years ended December 31,	2016 Private placements	2016 Mortgages and loans to Bank clients	2016 Total	2015 Private placements	2015 Mortgages and loans to Bank clients	2015 Total
Balance, January 1	**$ 72**	**$ 29**	**$ 101**	$ 72	$ 37	$ 109
Provisions	**112**	**14**	**126**	46	5	51
Recoveries	**(62)**	**(7)**	**(69)**	(9)	(4)	(13)
Write-offs[1]	**(30)**	**(10)**	**(40)**	(37)	(9)	(46)
Balance, December 31	**$ 92**	**$ 26**	**$ 118**	$ 72	$ 29	$ 101

[1] Includes disposals and impact of changes in foreign exchange rates.

(b) Securities lending, repurchase and reverse repurchase transactions

The Company engages in securities lending to generate fee income. Collateral, which exceeds the market value of the loaned securities, is retained by the Company until the underlying security has been returned to the Company. The market value of the loaned securities is monitored on a daily basis with additional collateral obtained or refunded as the market value of the underlying loaned securities fluctuates. As at December 31, 2016, the Company had loaned securities (which are included in invested assets) with a market value of $1,956 (2015 – $648). The Company holds collateral with a current market value that exceeds the value of securities lent in all cases.

The Company engages in reverse repurchase transactions to generate fee income and to take possession of securities to cover short positions in similar instruments and undertakes repurchase transactions for short-term funding purposes. As at December 31, 2016, the Company had engaged in reverse repurchase transactions of $250 (2015 – $547) which are recorded as short-term receivables. In addition, the Company had engaged in repurchase transactions of $255 as at December 31, 2016 (2015 – $269) which are recorded as payables.

(c) Credit default swaps

The Company replicates exposure to specific issuers by selling credit protection via credit default swaps ("CDSs") in order to complement its cash debt securities investing. The Company will not write CDS protection in excess of its government bond holdings. A CDS is a derivative instrument representing an agreement between two parties to exchange the credit risk of a single specified entity or an index based on the credit risk of a group of entities (all commonly referred to as the "reference entity" or a portfolio of "reference entities"), in return for a periodic premium. CDS contracts typically have a five-year term.

The following table provides details of the credit default swap protection sold by type of contract and external agency rating for the underlying reference security.

As at December 31, 2016	Notional amount[2]	Fair value	Weighted average maturity (in years)[3]
Single name CDSs[1]			
Corporate debt			
AAA	**$ 13**	**$ –**	**2**
AA	**37**	**1**	**3**
A	**457**	**13**	**4**
BBB	**155**	**4**	**3**
Total single name CDSs	**$ 662**	**$ 18**	**4**
Total CDS protection sold	**$ 662**	**$ 18**	**4**

As at December 31, 2015	Notional amount[2]	Fair value	Weighted average maturity (in years)[3]
Single name CDSs[1]			
Corporate debt			
AAA	$ 49	$ 1	2
AA	131	1	1
A	424	7	3
BBB	144	1	4
Total single name CDSs	$ 748	$ 10	3
Total CDS protection sold	$ 748	$ 10	3

[1] The rating agency designations are based on S&P where available followed by Moody's, DBRS, and Fitch. If no rating is available from a rating agency, then an internally developed rating is used.

[2] Notional amounts represent the maximum future payments the Company would have to pay its counterparties assuming a default of the underlying credit and zero recovery on the underlying issuer obligation.

[3] The weighted average maturity of the CDS is weighted based on notional amounts.

The Company holds no purchased credit protection as at December 31, 2016 and 2015.

(d) Derivatives

The Company's point-in-time exposure to losses related to credit risk of a derivative counterparty is limited to the amount of any net gains that may have accrued with a particular counterparty. Gross derivative counterparty exposure is measured as the total fair value (including accrued interest) of all outstanding contracts in a gain position excluding any offsetting contracts in a loss position and the impact of collateral on hand. The Company seeks to limit the risk of credit losses from derivative counterparties by: using investment grade counterparties; entering into master netting arrangements which permit the offsetting of contracts in a loss position in the case of a counterparty default; and entering into Credit Support Annex agreements, whereby collateral must be provided when the exposure exceeds a certain threshold. All contracts are held with counterparties rated BBB- or higher. As at December 31, 2016, the percentage of the Company's derivative exposure which was with counterparties rated AA- or higher amounted to 22 per cent (2015 – 21 per cent). The Company's exposure to credit risk was mitigated by $12,781 fair value of collateral held as security as at December 31, 2016 (2015 – $12,940).

As at December 31, 2016, the largest single counterparty exposure, without taking into account the impact of master netting agreements or the benefit of collateral held, was $3,891 (2015 – $4,155). The net exposure to this counterparty, after taking into account master netting agreements and the fair value of collateral held, was nil (2015 – nil). As at December 31, 2016, the total maximum credit exposure related to derivatives across all counterparties, without taking into account the impact of master netting agreements and the benefit of collateral held, was $24,603 (2015 – $25,332).

(e) Offsetting financial assets and financial liabilities

Certain derivatives, securities lending and repurchase agreements have conditional offset rights. The Company does not offset these financial instruments in the Consolidated Statements of Financial Position, as the rights of offset are conditional.

In the case of derivatives, collateral is collected from and pledged to counterparties and clearing houses to manage credit risk exposure in accordance with Credit Support Annexes to swap agreements and clearing agreements. Under master netting agreements, the Company has a right of offset in the event of default, insolvency, bankruptcy or other early termination.

In the case of reverse repurchase and repurchase transactions, additional collateral may be collected from or pledged to counterparties to manage credit exposure according to bilateral reverse repurchase or repurchase agreements. In the event of default by a counterparty, the Company is entitled to liquidate the assets the Company holds as collateral to offset against obligations to the same counterparty.

The following table presents the effect of conditional master netting and similar arrangements. Similar arrangements may include global master repurchase agreements, global master securities lending agreements, and any related rights to financial collateral.

As at December 31, 2016	Gross amounts of financial instruments presented in the Consolidated Statements of Financial Position[1]	Related amounts not set off in the Consolidated Statements of Financial Position: Amounts subject to an enforceable master netting arrangement or similar agreements	Related amounts not set off in the Consolidated Statements of Financial Position: Financial and cash collateral pledged (received)[2]	Net amount including financing trusts[3]	Net amounts excluding financing trusts
Financial assets					
Derivative assets	**$ 24,603**	**$ (12,031)**	**$ (12,382)**	**$ 190**	**$ 189**
Securities lending	**1,956**	**–**	**(1,956)**	**–**	**–**
Reverse repurchase agreements	**250**	**–**	**(250)**	**–**	**–**
Total financial assets	**$ 26,809**	**$ (12,031)**	**$ (14,588)**	**$ 190**	**$ 189**
Financial liabilities					
Derivative liabilities	**$ (15,095)**	**$ 12,031**	**$ 2,800**	**$ (264)**	**$ (42)**
Repurchase agreements	**(255)**	**–**	**255**	**–**	**–**
Total financial liabilities	**$ (15,350)**	**$ 12,031**	**$ 3,055**	**$ (264)**	**$ (42)**

As at December 31, 2015	Gross amounts of financial instruments presented in the Consolidated Statements of Financial Position[1]	Related amounts not set off in the Consolidated Statements of Financial Position: Amounts subject to an enforceable master netting arrangement or similar agreements	Related amounts not set off in the Consolidated Statements of Financial Position: Financial and cash collateral pledged (received)[2]	Net amount including financing trusts[3]	Net amounts excluding financing trusts
Financial assets					
Derivative assets	$ 25,332	$ (13,004)	$ (12,260)	$ 68	$ 68
Securities lending	648	–	(648)	–	–
Reverse repurchase agreements	547	(33)	(514)	–	–
Total financial assets	$ 26,527	$ (13,037)	$ (13,422)	$ 68	$ 68
Financial liabilities					
Derivative liabilities	$ (16,003)	$ 13,004	$ 2,711	$ (288)	$ (49)
Repurchase agreements	(269)	33	236	–	–
Total financial liabilities	$ (16,272)	$ 13,037	$ 2,947	$ (288)	$ (49)

[1] Financial assets and liabilities in the above table include accrued interest of $935 and $944, respectively (2015 – $1,062 and $953, respectively).

(2) Financial and cash collateral excludes over-collateralization. As at December 31, 2016, the Company was over-collateralized on OTC derivative assets, OTC derivative liabilities, securities lending and reverse purchase agreements and repurchase agreements in the amounts of $398, $494, $107 and $1, respectively (2015 – $680, $498, $43 and nil, respectively). As at December 31, 2016, collateral pledged (received) does not include collateral in transit on OTC instruments or include initial margin on exchange traded contracts or cleared contracts.

(3) The net amount includes derivative contracts entered into between the Company and its financing trusts which it does not consolidate. The Company does not exchange collateral on derivative contracts entered into with these trusts.

(f) Risk concentrations

The Company establishes enterprise-wide investment portfolio level targets and limits with the objective of ensuring that portfolios are diversified across asset classes and individual investment risks. The Company monitors actual investment positions and risk exposures for concentration risk and reports such findings to the Executive Risk Committee and the Risk Committee of the Board of Directors.

As at December 31,	2016	2015
Debt securities and private placements rated as investment grade BBB or higher (1)	**97%**	97%
Government debt securities as a per cent of total debt securities	**43%**	44%
Government private placements as a per cent of total private placements	**10%**	11%
Highest exposure to a single non-government debt security and private placement issuer	**$ 1,010**	$ 998
Largest single issuer as a per cent of the total equity portfolio	**3%**	2%
Income producing commercial office properties (2016 – 65% of real estate, 2015 – 70%)	**$ 9,200**	$ 10,803
Largest concentration of mortgages and real estate (2) – Ontario Canada (2016 – 24%, 2015 – 24%)	**$ 13,882**	$ 14,209

(1) Investment grade debt securities and private placements include 41% rated A, 14% rated AA and 21% rated AAA (2015 – 40%, 14% and 23%) investments based on external ratings where available.

(2) Mortgages and real estate are diversified geographically and by property type.

The following table shows the distribution of the debt securities and private placements portfolio by sector and industry.

Debt securities and private placements

	2016		2015	
As at December 31,	Carrying value	% of total	Carrying value	% of total
Government and agency	**$ 76,020**	**38**	$ 72,432	39
Utilities	**37,561**	**19**	34,890	19
Financial	**25,027**	**13**	24,518	13
Energy	**15,775**	**8**	13,422	7
Industrial	**13,088**	**6**	11,454	6
Consumer (non-cyclical)	**12,440**	**6**	10,832	6
Consumer (cyclical)	**4,256**	**2**	4,425	2
Securitized	**3,514**	**2**	3,215	2
Basic materials	**3,387**	**2**	3,338	2
Telecommunications	**3,091**	**2**	3,059	2
Technology	**2,231**	**1**	1,931	1
Media and internet	**1,175**	**1**	1,233	1
Diversified and miscellaneous	**786**	**–**	656	–
Total	**$ 198,351**	**100**	$ 185,405	100

(g) Insurance risk

Insurance risk is the risk of loss due to actual experience differing from the experience assumed when a product was designed and priced with respect to mortality and morbidity claims, policyholder behaviour and expenses. A variety of assumptions are made related to the future level of claims, policyholder behaviour, expenses and sales levels when products are designed and priced as well as in the determination of insurance contract liabilities. Assumptions for future claims are generally based on the Company and industry experience and assumptions for policyholder behaviours are generally based on the Company experience. Such assumptions require a significant amount of professional judgment and, therefore, actual experience may be materially different than the assumptions made by the Company. Claims may be impacted by the unusual onset of disease or illness, natural disasters, large-scale man-made disasters and acts of terrorism. Policyholder premium payment patterns, policy renewal, withdrawal and surrender activity is influenced by many factors including market and general economic conditions, and the availability and price of other products in the marketplace.

The Company manages insurance risk through global policies, standards and best practices with respect to product design, pricing, underwriting and claim adjudication, and a global life underwriting manual. Each business unit has underwriting procedures, including criteria for approval of risks and claims adjudication procedures. The Company has a global retention limit of US$30 and US$35, respectively, for individual and survivorship life insurance. Lower limits are applied in some markets and jurisdictions. The Company further reduces exposure to claims concentrations by applying geographical aggregate retention limits for certain covers.

(h) Concentration risk

The geographic concentration of the Company's insurance and investment contract liabilities, including embedded derivatives, is shown below. The disclosure is based on the countries in which the business is written.

As at December 31, 2016	Gross liabilities	Reinsurance assets	Net liabilities
U.S. and Canada	**$ 238,796**	**$ (34,987)**	**$ 203,809**
Asia and Other	**62,322**	**35**	**62,357**
Total	**$ 301,118**	**$ (34,952)**	**$ 266,166**

As at December 31, 2015	Gross liabilities	Reinsurance assets	Net liabilities
U.S. and Canada	$ 236,106	$ (35,408)	$ 200,698
Asia and Other	52,976	(18)	52,958
Total	$ 289,082	$ (35,426)	$ 253,656

(i) Reinsurance risk

In the normal course of business, the Company limits the amount of loss on any one policy by reinsuring certain levels of risk with other insurers. In addition, the Company accepts reinsurance from other reinsurers. Reinsurance ceded does not discharge the Company's liability as the primary insurer. Failure of reinsurers to honour their obligations could result in losses to the Company; consequently, allowances are established for amounts deemed uncollectible. In order to minimize losses from reinsurer insolvency, the Company monitors the concentration of credit risk both geographically and with any one reinsurer. In addition, the Company selects reinsurers with high credit ratings.

As at December 31, 2016, the Company had $34,952 (2015 – $35,426) of reinsurance assets. Of this, 92 per cent (2015 – 93 per cent) were ceded to reinsurers with Standard and Poor's ratings of A- or above. The Company's exposure to credit risk was mitigated by $16,600 fair value of collateral held as security as at December 31, 2016 (2015 – $16,721). Net exposure after taking into account offsetting agreements and the benefit of the fair value of collateral held was $18,352 as at December 31, 2016 (2015 – $18,705).

Note 11 Long-Term Debt

(a) Carrying value of long term debt instruments

As at December 31,	Issue date	Maturity date	Par value	2016	2015
4.70% Senior notes[1],[3]	June 23, 2016	June 23, 2046	US$ 1,000	**$ 1,333**	$ –
5.375% Senior notes[2],[3]	March 4, 2016	March 4, 2046	US$ 750	**994**	–
3.527% Senior notes[2],[3]	December 2, 2016	December 2, 2026	US$ 270	**361**	–
4.150% Senior notes[2],[3]	March 4, 2016	March 4, 2026	US$ 1,000	**1,333**	–
4.90% Senior notes[3],[4]	September 17, 2010	September 17, 2020	US$ 500	**669**	689
7.768% Medium term notes[5]	April 8, 2009	April 8, 2019	$ 600	**599**	599
5.505% Medium term notes[5]	June 26, 2008	June 26, 2018	$ 400	**400**	399
Promissory note to Manulife Finance (Delaware), L.P. ("MFLP") [6]	November 30, 2010	December 15, 2016	$ 150	**–**	150
Other notes payable	n/a	n/a	n/a	**7**	16
Total				**$ 5,696**	$ 1,853

(1) Issued by MFC during the year, interest is payable semi-annually. The notes may be redeemed in whole, but not in part, at the option of MFC, on June 23, 2021 and thereafter on every June 23, at a redemption price equal to 100% of the principal amount, together with accrued and unpaid interest.

(2) Issued by MFC during the year. The senior notes may be redeemed in whole or in part, at the option of MFC at any time, at a redemption price equal to the greater of par and a price based on the yield of a corresponding U.S. Treasury bond plus a specified number of basis points. The numbers of basis points for the 5.375%, 4.150% and 3.527% senior notes are 40, 35 and 20, respectively.

(3) These U.S. dollar senior notes have been designated as hedges of the Company's net investment in its U.S. operations which reduces the earnings volatility that would otherwise arise from the re-measurement of these senior notes into Canadian dollars.

(4) The senior notes may be redeemed in whole or in part, at the option of MFC at any time, at a redemption price equal to the greater of par and a price based on the yield of a corresponding U.S. Treasury bond plus 35 basis points.

(5) The medium term notes may be redeemed in whole or in part, at the option of MFC at any time, at a redemption price equal to the greater of par and a price based on the yield of a corresponding Government of Canada bond plus a specified number of basis points. The numbers of basis points for the 7.768% and 5.505% medium term notes are 125 and 39, respectively.

(6) On December 15, 2016, the promissory note to MFLP matured.

The cash amount of interest paid on long-term debt during the year ended December 31, 2016 was $191 (2015 – $183). Issue costs are amortized over the term of the debt.

(b) Fair value measurement

Fair value of a long-term debt instrument is determined using quoted market prices where available (Level 1). When quoted market prices are not available, fair value is determined with reference to quoted prices of a debt instrument with similar characteristics or estimated using discounted cash flows using observable market rates (Level 2).

Long-term debt is measured at amortized cost in the Consolidated Statements of Financial Position. Fair value of long-term debt as at December 31, 2016 was $6,100 (2015 – $2,066). Long-term debt was categorized in Level 2 of the fair value hierarchy (2015 – Level 2).

(c) Aggregate maturities of long-term debt

As at December 31,	2016	2015
Less than one year	**$ 7**	$ 150
One to two years	**400**	15
Two to three years	**599**	400
Three to four years	**669**	599
Four to five years	**–**	689
Greater than five years	**4,021**	–
Total	**$ 5,696**	$ 1,853

Note 12 Capital Instruments

(a) Carrying value of capital instruments

As at December 31,	Issuance date	Maturity date	Par value	2016	2015
Senior debenture notes – 7.535% fixed/floating [1]	July 10, 2009	December 31, 2108	$ 1,000	**$ 1,000**	$ 1,000
Subordinated note – floating [2]	December 14, 2006	December 15, 2036	$ 650	**647**	646
Subordinated debentures – 3.181% fixed/floating [3]	November 20, 2015	November 22, 2027	$ 1,000	**996**	995
Subordinated debentures – 3.85% fixed/fixed reset [4]	May 25, 2016	May 25, 2026	S$ 500	**461**	–
Subordinated debentures – 2.389% fixed/floating [5]	June 1, 2015	January 5, 2026	$ 350	**349**	348
Subordinated debentures – 2.10% fixed/floating [6]	March 10, 2015	June 1, 2025	$ 750	**747**	747
Subordinated debentures – 2.64% fixed/floating [7]	December 1, 2014	January 15, 2025	$ 500	**499**	498
Subordinated debentures – 2.811% fixed/floating [8]	February 21, 2014	February 21, 2024	$ 500	**499**	498
Surplus notes – 7.375% U.S. dollar [9]	February 25, 1994	February 15, 2024	US$ 450	**627**	649
Subordinated debentures – 2.926% fixed/floating [10]	November 29, 2013	November 29, 2023	$ 250	**249**	249
Subordinated debentures – 2.819% fixed/floating [11]	February 25, 2013	February 26, 2023	$ 200	**200**	200
Subordinated debentures – 3.938% fixed/floating [12]	September 21, 2012	September 21, 2022	$ 400	**407**	417
Subordinated debentures – 4.165% fixed/floating [13]	February 17, 2012	June 1, 2022	$ 500	**499**	499
Subordinated note – floating [14]	December 14, 2006	December 15, 2021	$ 400	**–**	400
Subordinated debentures – 4.21% fixed/floating [15]	November 18, 2011	November 18, 2021	$ 550	**–**	549
Total				**$ 7,180**	$ 7,695

(1) Issued by MLI to Manulife Financial Capital Trust II, interest is payable semi-annually. Manulife Financial Capital Trust II is a non-consolidated related party to the Company. On December 31, 2019 and on every fifth anniversary after December 31, 2019 (the "Interest Reset Date"), the rate of interest will be reset to the yield on five year Government of Canada bonds plus 5.2%. On or after December 31, 2014, with regulatory approval, MLI may redeem the debenture, in whole or in part, at the greater of par or the fair value of the debt based on the yield on uncallable Government of Canada bonds to the next Interest Reset Date plus (a) 1.0325% if the redemption date is prior to December 31, 2019, or (b) 2.065% if the redemption date is after December 31, 2019, together with accrued and unpaid interest.

(2) Issued by Manulife Holdings (Delaware) LLC ("MHDLL"), now John Hancock Financial Corporation ("JHFC"), a wholly owned subsidiary of MFC, to Manulife Finance (Delaware) LLC ("MFLLC"), a subsidiary of Manulife Finance (Delaware) L.P. ("MFLP"). MFLP and its subsidiaries are non-consolidated related parties to the Company. The note bears interest at the 90-day Bankers' Acceptance rate plus 0.72% and is payable semi-annually. With regulatory approval, JHFC may redeem the note, in whole or in part, at any time, at par, together with accrued and unpaid interest.

(3) Issued by MLI, interest is payable semi-annually. After November 22, 2022 the interest rate is the 90-day Bankers' Acceptance rate plus 1.57% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after November 22, 2022, at par, together with accrued and unpaid interest.

(4) Issued by MFC during the year, interest is payable semi-annually. After May 25, 2021, the interest rate will reset to equal the 5-year Singapore Dollar Swap rate plus 1.97%. With regulatory approval, MFC may redeem the debentures, in whole, but not in part, on May 25, 2021 and thereafter on each interest payment date at a redemption price equal to par, together with accrued and unpaid interest.

(5) Issued by MLI, interest is payable semi-annually. After January 5, 2021 the interest rate is the 90-day Bankers' Acceptance rate plus 0.83% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after January 5, 2021, at par, together with accrued and unpaid interest.

(6) Issued by MLI, interest is payable semi-annually. After June 1, 2020 the interest rate is the 90-day Bankers' Acceptance rate plus 0.72% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after June 1, 2020, at par, together with accrued and unpaid interest.

(7) Issued by MLI, interest is payable semi-annually. After January 15, 2020 the interest rate is the 90-day Bankers' Acceptance rate plus 0.73% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after January 15, 2020, at par, together with accrued and unpaid interest.

(8) Issued by MLI, interest is payable semi-annually. After February 21, 2019 the interest rate is the 90-day Bankers' Acceptance rate plus 0.80% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after February 21, 2019, at par, together with accrued and unpaid interest.

(9) Issued by John Hancock Mutual Life Insurance Company, now John Hancock Life Insurance Company (U.S.A.). Any payment of interest or principal on the surplus notes requires prior approval from the Commissioner of the Office of Financial and Insurance Regulation of the State of Michigan. The carrying value of the surplus notes reflects an unamortized fair value increment of US$26 (2015 – US$29), which arose as a result of the acquisition of John Hancock Financial Services, Inc. The amortization of the fair value adjustment is recorded in interest expense.

(10) Issued by MLI, interest is payable semi-annually. After November 29, 2018 the interest rate is the 90-day Bankers' Acceptance rate plus 0.85% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after November 29, 2018, at par, together with accrued and unpaid interest.

(11) Issued by MLI, interest is payable semi-annually. After February 26, 2018 the interest rate is the 90-day Bankers' Acceptance rate plus 0.95% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after February 26, 2018, at par, together with accrued and unpaid interest.

(12) Issued by the Standard Life Assurance Company of Canada ("SCDA"), which was acquired by MLI on January 30, 2015, as part of the Standard Life acquisition, the subordinated debt was assumed by MLI on July 1, 2015 as a result of SCDA's wind-up into MLI. Interest is payable semi-annually. After September 21, 2017 the interest rate is the 90-day Bankers' Acceptance rate plus 2.10% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after September 21, 2017, at par, together with accrued and unpaid interest.

(13) Issued by MLI, interest is payable semi-annually. After June 1, 2017 the interest rate is the 90-day Bankers' Acceptance rate plus 2.45% and is payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after June 1, 2017, at par, together with accrued and unpaid interest.

(14) On December 15, 2016, JHFC, a wholly owned subsidiary of MFC, redeemed in full the subordinated notes with MFLLC, a subsidiary of MFLP, at par.

(15) On November 18, 2016, MLI redeemed in full the 4.21% subordinated debentures at par.

(b) Fair value measurement

Fair value of capital instruments is determined using quoted market prices where available (Level 1). When quoted market prices are not available, fair value is determined with reference to quoted prices of a debt instrument with similar characteristics or estimated using discounted cash flows using observable market rates (Level 2).

Capital instruments are measured at amortized cost in the Consolidated Statements of Financial Position. As at December 31, 2016, fair value of capital instruments was $7,417 (2015 – $7,916). Capital instruments were categorized in Level 2 of the fair value hierarchy (2015 – Level 2).

Note 13 Share Capital and Earnings Per Share

The authorized capital of MFC consists of:

- an unlimited number of common shares without nominal or par value; and
- an unlimited number of Class A, Class B and Class 1 preferred shares without nominal or par value, issuable in series.

(a) Preferred shares

The changes in issued and outstanding preferred shares are as follows.

	2016		2015	
For the years ended December 31,	Number of shares (in millions)	Amount	Number of shares (in millions)	Amount
Balance, January 1	**110**	**$ 2,693**	110	$ 2,693
Issued, Class 1 shares, Series 21 [1]	**17**	**425**	–	–
Converted, Class 1 shares, Series 3 [2]	**(2)**	**(42)**	–	–
Issued, Class 1 shares, Series 4 [2]	**2**	**42**	–	–
Issued, Class 1 shares, Series 23 [3]	**19**	**475**	–	–
Issuance costs, net of tax	**–**	**(16)**	–	–
Balance, December 31	**146**	**$ 3,577**	110	$ 2,693

[1] On February 25, 2016, MFC issued 16 million of Rate Reset Class 1 Shares Series 21 at a price of $25 per share to raise gross proceeds of $400 and, on March 3, 2016, MFC issued an additional 1 million Class 1 Shares Series 21 pursuant to the exercise in full by the underwriters of their option to purchase additional Class 1 Shares Series 21, for total gross proceeds of $425.

[2] MFC did not exercise its right to redeem all or any of the outstanding Class 1 Shares Series 3 on June 19, 2016 (the earliest redemption date). 1,664,169 of 8,000,000 Class 1 Shares Series 3 were converted, on a one-for-one basis, into Floating Rate Class 1 Shares Series 4 on June 20, 2016. 6,335,831 Class 1 Shares Series 3 remain outstanding at an annual fixed dividend rate of 2.178% for a five year period commencing on June 20, 2016.

[3] On November 22, 2016, MFC issued 19 million of Rate Reset Class 1 Shares Series 23 at a price of $25 per share to raise gross proceeds of $475.

Further information on the preferred shares outstanding is as follows.

As at December 31, 2016	Issue date	Annual dividend rate[1]	Earliest redemption date[2]	Number of shares (in millions)	Face amount	Net amount[3]
Class A preferred shares						
Series 2	February 18, 2005	4.65%	n/a	14	$ 350	**$ 344**
Series 3	January 3, 2006	4.50%	n/a	12	300	**294**
Class 1 preferred shares						
Series 3[4],[5]	March 11, 2011	2.178%	June 19, 2021	6	158	**155**
Series 4	June 20, 2016	floating[6]	n/a	2	42	**41**
Series 5[4],[5],[7]	December 6, 2011	3.891%	December 19, 2021	8	200	**195**
Series 7[4],[5]	February 22, 2012	4.60%	March 19, 2017	10	250	**244**
Series 9[4],[5]	May 24, 2012	4.40%	September 19, 2017	10	250	**244**
Series 11[4],[5]	December 4, 2012	4.00%	March 19, 2018	8	200	**196**
Series 13[4],[5]	June 21, 2013	3.80%	September 19, 2018	8	200	**196**
Series 15[4],[5]	February 25, 2014	3.90%	June 19, 2019	8	200	**195**
Series 17[4],[5]	August 15, 2014	3.90%	December 19, 2019	14	350	**343**
Series 19[4],[5]	December 3, 2014	3.80%	March 19, 2020	10	250	**246**
Series 21[4],[5]	February 25, 2016	5.60%	June 19, 2021	17	425	**417**
Series 23[4],[5]	November 22, 2016	4.85%	March 19, 2022	19	475	**467**
Total				146	$ 3,650	**$ 3,577**

[1] Holders of Class A and Class 1 preferred shares are entitled to receive non-cumulative preferential cash dividends on a quarterly basis, as and when declared by the Board of Directors.

[2] Redemption of all preferred shares is subject to regulatory approval. With the exception of Class A Series 2, Class A Series 3 and Class 1 Series 4 preferred shares, MFC may redeem each series, in whole or in part, at par, on the earliest redemption date or every five years thereafter. Class A Series 2 and Series 3 preferred shares are past their respective earliest redemption date and MFC may redeem these shares, in whole or in part, at par at any time, subject to regulatory approval, as noted. MFC may redeem the Class 1 Series 4, in whole or in part, at any time, at $25.00 per share if redeemed on June 19, 2021 and on June 19 every five years thereafter, or at $25.50 per share if redeemed on any other date after June 19, 2016, subject to regulatory approval, as noted.

[3] Net of after-tax issuance costs.

(4) On the earliest redemption date and every five years thereafter, the annual dividend rate will be reset to the five year Government of Canada bond yield plus a yield specified for each series. The specified yield for Class 1 shares is: Series 3 – 1.41%, Series 5 – 2.90%, Series 7 – 3.13%, Series 9 – 2.86%, Series 11 – 2.61%, Series 13 – 2.22%, Series 15 – 2.16%, Series 17 – 2.36%, Series 19 – 2.30%, Series 21 – 4.97% and Series 23 – 3.83%.
(5) On the earliest redemption date and every five years thereafter, Class 1 preferred shares are convertible at the option of the holder into a new series that is one number higher than their existing series, and the holders are entitled to non-cumulative preferential cash dividends, payable quarterly if and when declared by the Board of Directors, at a rate equal to the three month Government of Canada treasury bill yield plus the rate specified in footnote 4 above.
(6) The floating dividend rate for the Class 1 Shares Series 4 will equal the three month Government of Canada Treasury bill yield plus 1.41%.
(7) MFC did not exercise its right to redeem all or any of the outstanding Class 1 Shares Series 5 on December 19, 2016 (the earliest redemption date). Dividend rate for Class 1 Shares Series 5 was reset as specified in footnote 4 above to an annual fixed rate of 3.891% for a five year period commencing on December 20, 2016.

(b) Common shares

The changes in common shares issued and outstanding are as follows.

	2016		2015	
For the years ended December 31,	Number of shares (in millions)	Amount	Number of shares (in millions)	Amount
Balance, January 1	**1,972**	**$ 22,799**	1,864	$ 20,556
Issued on exercise of stock options and deferred share units	**3**	**66**	2	37
Issued in exchange for subscription receipts(1)	**–**	**–**	106	2,206
Total	**1,975**	**$ 22,865**	1,972	$ 22,799

(1) On September 15, 2014, as part of the financing of the transaction related to the purchase of the Canadian-based operations of Standard Life, MFC issued 105,647,334 subscription receipts through a combination of a public offering and a private placement with the Caisse de dépôt et placement du Québec. The net cash proceeds from the sale of the subscription receipts were held by an escrow agent, in a restricted account, until closing of the transaction on January 30, 2015. Each subscription receipt entitled the holder to automatically receive, without payment of additional consideration or further action, one common share of the Company together with an amount equal to the per share dividends the Company declared on its common shares for record dates which occur in the period from September 15, 2014 up to January 29, 2015, net of any applicable withholding taxes.

(c) Earnings per share

The following table presents basic and diluted earnings per share of the Company.

For the years ended December 31,	**2016**	2015
Basic earnings per common share	**$ 1.42**	$ 1.06
Diluted earnings per common share	**1.41**	1.05

The following is a reconciliation of the denominator (number of shares) in the calculation of basic and diluted earnings per share.

For the years ended December 31,	**2016**	2015
Weighted average number of common shares (in millions)	**1,973**	1,962
Dilutive stock-based awards(1) (in millions)	**4**	7
Dilutive convertible instruments (in millions)	**–**	8
Weighted average number of diluted common shares (in millions)	**1,977**	1,977

(1) The dilutive effect of stock-based awards was calculated using the treasury stock method. This method calculates the number of incremental shares by assuming the outstanding stock-based awards are (i) exercised and (ii) then reduced by the number of shares assumed to be repurchased from the issuance proceeds, using the average market price of MFC common shares for the year. Excluded from the calculation was a weighted average of 14 million (December 31, 2015 – 5 million) anti-dilutive stock-based awards.

(d) Quarterly dividend declaration subsequent to year end

On February 8, 2017, the Company's Board of Directors approved a quarterly dividend of $0.205 per share on the common shares of MFC, payable on or after March 20, 2017 to shareholders of record at the close of business on February 22, 2017.

The Board also declared dividends on the following non-cumulative preferred shares, payable on or after March 19, 2017 to shareholders of record at the close of business on February 22, 2017.

Class A Shares Series 2 – $0.29063 per share
Class A Shares Series 3 – $0.28125 per share
Class 1 Shares Series 3 – $0.136125 per share
Class 1 Shares Series 4 – $0.117863 per share
Class 1 Shares Series 5 – $0.275 per share
Class 1 Shares Series 7 – $0.2875 per share
Class 1 Shares Series 9 – $0.275 per share
Class 1 Shares Series 11 – $0.25 per share
Class 1 Shares Series 13 – $0.2375 per share
Class 1 Shares Series 15 – $0.24375 per share
Class 1 Shares Series 17 – $0.24375 per share
Class 1 Shares Series 19 – $0.2375 per share
Class 1 Shares Series 21 – $0.35 per share
Class 1 Shares Series 23 – $0.388664 per share

Note 14 Capital Management

(a) Capital Management

The Company monitors and manages its consolidated capital in compliance with the Minimum Continuing Capital and Surplus Requirement ("MCCSR") guideline, issued by the Office of the Superintendent of Financial Institutions ("OSFI"). Under this regime, the Company's consolidated available capital is measured against a required amount of risk capital determined in accordance with the guideline.

The Company's operating activities are mostly conducted within MLI or its subsidiaries. MLI is regulated by OSFI and is also subject to consolidated risk-based capital requirements using the OSFI MCCSR framework. Some affiliate reinsurance business is undertaken outside the MLI consolidated group.

OSFI will be implementing a revised approach to the regulatory capital framework in Canada to come into effect in 2018. In September 2016, OSFI released the final Life Insurance Capital Adequacy Test ("LICAT") guideline that will replace the MCCSR framework in 2018.

The Company seeks to manage its capital with the objectives of:

- Operating with sufficient capital to be able to honour all commitments to its policyholders and creditors with a high degree of confidence;
- Retaining the ongoing confidence of regulators, policyholders, rating agencies, investors and other creditors in order to ensure access to capital markets; and
- Optimizing return on capital to meet shareholders' expectations subject to constraints and considerations of adequate levels of capital established to meet the first two objectives.

Capital is managed and monitored in accordance with the Capital Management Policy. The policy is reviewed and approved by the Board of Directors annually and is integrated with the Company's risk and financial management frameworks. It establishes guidelines regarding the quantity and quality of capital, internal capital mobility, and proactive management of ongoing and future capital requirements.

The capital management framework takes into account the requirements of the Company as a whole as well as the needs of each of the Company's subsidiaries. Internal capital targets are set above the regulatory requirements, and consider a number of factors, including expectations of regulators and rating agencies, results of sensitivity and stress testing and the Company own risk assessments. The Company monitors against these internal targets and initiates actions appropriate to achieving its business objectives.

The following measure of consolidated capital serves as the foundation of the Company's capital management activities at the MFC level. For regulatory reporting purposes, the numbers are further adjusted for various additions or deductions to capital, as mandated by the OSFI guideline.

Consolidated capital

As at December 31,	2016	2015
Total equity	$ 42,823	$ 41,938
Adjusted for AOCI loss on cash flow hedges	(232)	(264)
Total equity excluding AOCI on cash flow hedges	43,055	42,202
Qualifying capital instruments	7,180	7,695
Total capital	**$ 50,235**	$ 49,897

(b) Restrictions on dividends and capital distributions

Dividends and capital distributions are restricted under the Insurance Company Act ("ICA"). These restrictions apply to both the Company and its primary operating subsidiary MLI. The ICA prohibits the declaration or payment of any dividend on shares of an insurance company if there are reasonable grounds for believing a company does not have adequate capital and adequate and appropriate forms of liquidity or the declaration or the payment of the dividend would cause the Company to be in contravention of any regulation made under the ICA respecting the maintenance of adequate capital and adequate and appropriate forms of liquidity, or of any direction made to the Company by the Superintendent. The ICA also requires an insurance company to notify the Superintendent of the declaration of a dividend at least 15 days prior to the date fixed for its payment. Similarly, the ICA prohibits the purchase for cancellation of any shares issued by an insurance company or the redemption of any redeemable shares or other similar capital transactions, if there are reasonable grounds for believing that the Company does not have adequate capital and adequate and appropriate forms of liquidity or the payment would cause the Company to be in contravention of any regulation made under the ICA respecting the maintenance of adequate capital and adequate and appropriate forms of liquidity, or any direction made to the Company by the Superintendent. These latter transactions would require the prior approval of the Superintendent.

Since the Company is a holding company that conducts all of its operations through regulated insurance subsidiaries (or companies owned directly or indirectly by these subsidiaries), its ability to pay future dividends will depend on the receipt of sufficient funds from

its regulated insurance subsidiaries. These subsidiaries are also subject to certain regulatory restrictions under laws in Canada, the United States and certain other countries that may limit their ability to pay dividends or make other upstream distributions.

The Company and MLI have covenanted for the benefit of holders of the outstanding Trust II Notes – Series I (the "Notes") that, if interest is not paid in full in cash on the Notes on any interest payment date or if MLI elects that holders of Notes invest interest payable on the Notes on any interest payment date in a new series of Manufacturers Life Class 1 Shares, MLI will not declare or pay cash dividends on any MLI Public Preferred Shares (as defined below), if any are outstanding, and if no MLI Public Preferred Shares are outstanding, MFC will not declare or pay cash dividends on its Preferred Shares and Common Shares, in each case, until the sixth month following such deferral date. "MLI Public Preferred Shares" means, at any time, preferred shares of MLI which at that time: (a) have been issued to the public (excluding any preferred shares of MLI held beneficially by affiliates of MLI); (b) are listed on a recognized stock exchange; and (c) have an aggregate liquidation entitlement of at least $200, however, if at any time, there is more than one class of MLI Public Preferred Shares outstanding, then the most senior class or classes of outstanding MLI Public Preferred Shares shall, for all purposes, be the MLI Public Preferred Shares.

Note 15 Stock-Based Compensation

(a) Stock options plans

Under MFC's Executive Stock Option Plan ("ESOP"), deferred share units and stock options are granted to selected individuals. Options provide the holder with the right to purchase common shares of MFC at an exercise price equal to the higher of the prior day or prior five day average closing market price of common shares on the Toronto Stock Exchange on the date the options were granted. The options vest over a period not exceeding four years and expire not more than 10 years from the grant date. Effective with the 2015 grant, options may only be exercised after the fifth year anniversary. A total of 73,600,000 common shares have been reserved for issuance under the ESOP.

Options outstanding

	2016		2015	
For the years ended December 31,	Number of options (in millions)	Weighted average exercise price	Number of options (in millions)	Weighted average exercise price
Outstanding, January 1	**30**	**$ 20.72**	30	$ 20.82
Granted	**6**	**17.65**	4	22.01
Exercised	**(3)**	**15.49**	(2)	15.33
Expired	**(2)**	**32.92**	(2)	30.43
Forfeited	**(1)**	**21.04**	–	23.06
Outstanding, December 31	**30**	**$ 19.80**	30	$ 20.72
Exercisable, December 31	**19**	**$ 20.25**	20	$ 21.45

	Options outstanding			Options exercisable		
For the year ended December 31, 2016	Number of options (in millions)	Weighted average exercise price	Weighted average remaining contractual life (in years)	Number of options (in millions)	Weighted average exercise price	Weighted average remaining contractual life (in years)
$11.08 – $20.99	**20**	**$ 16.63**	**5.30**	**13**	**$ 16.31**	**3.75**
$21.00 – $29.99	**7**	**$ 21.69**	**6.82**	**3**	**$ 21.61**	**5.86**
$30.00 – $40.38	**3**	**$ 38.73**	**0.70**	**3**	**$ 38.73**	**0.70**
Total	**30**	**$ 19.80**	**5.26**	**19**	**$ 20.25**	**3.66**

The weighted average fair value of each option granted in 2016 has been estimated at $3.78 (2015 – $4.84) using the Black-Scholes option-pricing model. The pricing model uses the following assumptions for these options: risk-free interest rate of 1.50% (2015 –1.75%), dividend yield of 3.00% (2015 – 3.00%), expected volatility of 29.5% (2015 – 29.5%) and expected life of 6.7 (2015 – 6.7) years. Expected volatility is estimated by evaluating a number of factors including historical volatility of the share price over multi-year periods.

Compensation expense related to stock options was $19 for the year ended December 31, 2016 (2015 – $16).

(b) Deferred share units plans

In 2000, MFC granted deferred share units ("DSUs") to certain employees under the ESOP. These DSUs vested over a three year period and each DSU entitles the holder to receive one common share on retirement or termination of employment. When dividends are paid on common shares, holders of DSUs are deemed to receive dividends at the same rate, payable in the form of additional DSUs. The number of DSUs outstanding was 633,000 as at December 31, 2016 (2015 – 690,000).

In addition, for certain employees and pursuant to the Company's deferred compensation program, MFC grants DSUs under the ESOP which entitle the holder to receive payment in cash equal to the value of the same number of common shares plus credited dividends on retirement or termination of employment. In 2016, the Company granted 14,000 DSUs (2015 – 315,000) to certain employees of which vest after four years on the day they were granted. In 2016, 27,000 DSUs (2015 – 34,000) were granted to certain employees who elected to defer receipt of all or part of their annual bonus. These DSUs vested immediately. Also, in 2016, 83,000 DSUs (2015 – 85,000) were granted to certain employees to defer payment of all or part of their Restricted Share Units ("RSUs") and/or Performance Share Units ("PSUs"). These DSUs also vested immediately.

Fair value of the 254,000 DSUs issued in the year was $23.91 per unit, as at December 31, 2016 (546,000 issued at $20.74 per unit on December 31, 2015).

Under the Stock Plan for Non-Employee Directors, each eligible director may elect to receive his or her annual director's retainer and fees in DSUs or common shares in lieu of cash. Upon termination of Board service, an eligible director who has elected to receive DSUs will be entitled to receive cash equal to the value of the DSUs accumulated in his or her account, or at his or her direction, an equivalent number of common shares. A total of one million common shares have been reserved for issuance under this plan.

For the years ended December 31, Number of DSUs (in thousands)	**2016**	2015
Outstanding, January 1	**2,542**	2,332
Issued	**254**	546
Reinvested	**97**	75
Redeemed	**(184)**	(411)
Forfeitures and cancellations	**(27)**	–
Outstanding, December 31	**2,682**	2,542

Of the DSUs outstanding as at December 31, 2016, 633,000 (2015 – 690,000) entitle the holder to receive common shares, 1,235,000 (2015 – 1,195,000) entitle the holder to receive payment in cash and 814,000 (2015 – 657,000) entitle the holder to receive payment in cash or common shares, at the option of the holder.

Compensation expense related to DSUs was $1 for the year ended December 31, 2016 (2015 – $5).

The carrying amount of the liability relating to the DSUs as at December 31, 2016 is $26 (2015 – $22) and is included within other liabilities.

(c) Restricted share units and performance share units plans

For the year ended December 31, 2016, 7.6 million RSUs (2015 – 5.6 million) and 1.2 million PSUs (2015 – 0.8 million) were granted to certain eligible employees under MFC's Restricted Share Unit Plan. The fair values of the RSUs and PSUs granted in the year were $23.91 per unit as at December 31, 2016 (2015 – $20.74 per unit). Each RSU/PSU entitles the recipient to receive payment equal to the market value of one common share, plus credited dividends, at the time of vesting, subject to any performance conditions.

RSUs and PSUs granted in February 2016 vest on the date that is 34 months from the grant date (December 15, 2018), and the related compensation expense is recognized over this period, except where the employee is eligible to retire prior to a vesting date, in which case the cost is recognized over the period between the grant date and the date on which the employee is eligible to retire. Compensation expense related to RSUs and PSUs was $110 and $9, respectively, for the year ended December 31, 2016 (2015 – $93 and $15, respectively).

The carrying amount of the liability relating to the RSUs and PSUs as at December 31, 2016 is $196 (2015 – $142) and is included within other liabilities.

(d) Global share ownership plan

MFC's Global Share Ownership Plan ("GSOP") allows qualifying employees to choose to apply up to five per cent of their annual base earnings toward the purchase of common shares. The Company matches a percentage of the employee's eligible contributions up to a maximum amount. The Company's contributions vest immediately. All contributions are used to purchase common shares in the open market.

Note 16 Employee Future Benefits

The Company maintains defined contribution and defined benefit pension plans and other post-employment plans for employees and agents including registered (tax qualified) pension plans that are typically funded, as well as supplemental non-registered (non-qualified) pension plans for executives, retiree welfare plans and disability welfare plans that are typically not funded.

(a) Plan characteristics

To reduce the financial risk associated with final average pay defined benefit pension plans and retiree welfare plans, the Company has over time closed all these plans to new members and, in the case of pension plans, has replaced them with capital accumulation plans. The latter include defined benefit cash balance plans, 401(k) plans and/or defined contribution plans, depending on the country of employment. The result is that final average pay pension plans account for less than 50 per cent of the Company's global pension obligations and the number of employees who accrue these pensions declines each year.

Prior to the Company's acquisition of the Canadian-based operations of Standard Life plc, advance provision had been made on Standard Life's balance sheet for continuing its practice of regularly granting increases in retiree pensions on an non-contractual

ad-hoc basis. In 2016, the Company concluded that increases would no longer be regularly granted, consistent with the treatment of pensions for retirees under other Manulife plans. To reflect this change, the advance provision was removed, reducing the net defined benefit liability for the former Standard Life plan by $55 which was recorded through income.

All pension arrangements are governed by local pension committees or management but significant plan changes require approval from the Company's Board of Directors.

The Company's funding policy for remaining defined benefit pension plans is to make the minimum annual contributions required by regulations in the countries in which the plans are offered. Assumptions and methods prescribed for regulatory funding purposes typically differ from those used for accounting purposes.

The Company's remaining defined benefit pension and/or retiree welfare plan obligations are for plans in the U.S., Canada, Japan, and Taiwan. There are also disability welfare plans in Canada and the U.S.

The largest of these pension and retiree welfare plans are the primary defined benefit plans for employees in the U.S. and Canada. These are considered to be the material plans that are the subject of the disclosures in the balance of this note. The Company measures its defined benefit obligations and fair value of plan assets for accounting purposes as at December 31 each year.

U.S. defined benefit and retiree welfare plans

The Company operates a qualified cash balance plan that is open to new members, a closed non-qualified cash balance plan, and a closed retiree welfare plan.

Actuarial valuations to determine the Company's minimum funding contributions for the qualified cash balance plan are required annually. Deficits revealed in the funding valuations must generally be funded over a period of up to seven years. It is expected that there will be no required funding for this plan in 2017. There are no plan assets set aside for the non-qualified cash balance plan.

The retiree welfare plan subsidizes the cost of life insurance and medical benefits. The majority of those who retired after 1991 receive a fixed-dollar subsidy from the Company based on service. The plan was closed to all employees hired after 2004. While assets have been set aside in a qualified trust to pay a portion of future retiree welfare benefits, this funding is optional. Retiree welfare benefits offered under the plan coordinate with the U.S. Medicare program to make optimal use of available federal financial support.

The qualified pension and retiree welfare plans are governed by the U.S. Benefits Committee, while the non-qualified pension plan is governed by the U.S. Non-Qualified Plans Subcommittee.

Canadian defined benefit and retiree welfare plans

The Company's defined benefit plans in Canada include two registered final average pay pension plans, a non-registered supplemental final average pay pension plan and a retiree welfare plan, all of which have been closed to new members.

Actuarial valuations to determine the Company's minimum funding contributions for the registered plans are required at least once every three years. Deficits revealed in the funding valuation must generally be funded over a period of not less than five years. For 2017, the required funding for these plans is expected to be $33. The supplemental non-registered pension plan is not funded.

The retiree welfare plan subsidizes the cost of life insurance, medical and dental benefits. These subsidies are a fixed dollar amount for those who retired after April 30, 2013 and will be eliminated for those who retire after 2019. There are no assets set aside for this plan.

The registered pension plans are governed by Pension Committees, while the supplemental non-registered plan is governed by the Board of Directors. The retiree welfare plan is governed by management.

(b) Risks

In final average pay pension plans and retiree welfare plans, the Company generally bears the material risks which include interest rate, investment, longevity and health care cost inflation risks. In defined contribution plans, these risks are typically borne by the employee. In cash balance plans, the interest rate, investment and longevity risks are partially transferred to the employee.

Material sources of risk to the Company for all plans include:

- A decline in discount rates that increases the defined benefit obligations by more than the change in value of plan assets;
- Lower than expected rates of mortality; and
- For retiree welfare plans, higher than expected health care costs.

The Company has managed these risks through plan design and eligibility changes that have limited the size and growth of the defined benefit obligations. Investment risks for funded plans are managed through strategies aimed at improving the alignment between movements in the invested assets and movements in the obligations.

In the U.S., delegated committee representatives and management review the financial status of the qualified defined benefit pension plan at least monthly, and steps are taken in accordance with an established dynamic investment policy to reduce the risk in the plan as the funded status improves. As at December 31, 2016, the target asset allocation for the plan was 35% return-seeking assets and 65% liability-hedging assets.

In Canada, internal committees and management review the financial status of the registered defined benefit pension plans on at least a quarterly basis. As at December 31, 2016, the target asset allocation for the plan was 22% return-seeking assets and 78% liability-hedging assets with an ultimate target of 20% return-seeking assets and 80% liability-hedging assets by 2017. The asset allocation for the plan acquired from Standard Life is 64% return-seeking assets and 36% liability-hedging assets as at December 31, 2016.

(c) Pension and retiree welfare plans

For the years ended December 31,	Pension Plans 2016	Pension Plans 2015	Retiree welfare plans 2016	Retiree welfare plans 2015
Changes in defined benefit obligation:				
Ending balance prior year	**$ 4,823**	$ 4,089	**$ 713**	$ 648
Acquisitions	**–**	483	**–**	–
Plan mergers[1]	**143**	–	**–**	–
Current service cost	**52**	54	**1**	1
Past service cost	**(57)**	–	**–**	–
Interest cost	**196**	183	**28**	27
Plan participants' contributions	**1**	1	**5**	5
Actuarial losses (gains) due to:				
Experience	**–**	–	**(2)**	(2)
Demographic assumption changes	**(94)**	(4)	**(16)**	–
Economic assumption changes	**116**	(202)	**20**	(10)
Curtailment (gains) losses	**–**	(9)	**–**	–
Benefits paid	**(314)**	(342)	**(50)**	(52)
Impact of changes in foreign exchange rates	**(99)**	570	**(17)**	96
Defined benefit obligation, December 31	**$ 4,767**	$ 4,823	**$ 682**	$ 713

For the years ended December 31,	Pension plans 2016	Pension plans 2015	Retiree welfare plans 2016	Retiree welfare plans 2015
Change in plan assets:				
Fair value of plan assets, ending balance prior year	**$ 4,122**	$ 3,442	**$ 635**	$ 538
Acquisitions	**–**	406	**–**	–
Plan mergers[1]	**129**	–	**–**	–
Interest income	**169**	156	**25**	23
Employer contributions	**106**	119	**–**	26
Plan participants' contributions	**1**	1	**5**	5
Benefits paid	**(314)**	(342)	**(50)**	(52)
Administration costs	**(7)**	(6)	**(2)**	(1)
Actuarial gains (losses)	**158**	(167)	**8**	(7)
Impact of changes in foreign exchange rates	**(87)**	513	**(18)**	103
Fair value of plan assets, December 31	**$ 4,277**	$ 4,122	**$ 603**	$ 635

[1] In Canada, two smaller pension plans were merged into the primary Manulife pension plan in 2016. Amounts shown represent the value of the defined benefit obligations and assets transferred from the smaller plans into the primary Manulife plan.

(d) Amounts recognized in the Consolidated Statements of Financial Position

As at December 31,	Pension plans 2016	Pension plans 2015	Retiree welfare plans 2016	Retiree welfare plans 2015
Development of net defined benefit liability				
Defined benefit obligation	**$ 4,767**	$ 4,823	**$ 682**	$ 713
Fair value of plan assets	**4,277**	4,122	**603**	635
Deficit	**490**	701	**79**	78
Effect of asset limit[1]	**–**	–	**–**	–
Deficit and net defined benefit liability	**490**	701	**79**	78
Deficit is comprised of:				
Funded or partially funded plans	**(292)**	(133)	**(63)**	(61)
Unfunded plans	**782**	834	**142**	139
Deficit and net defined benefit liability	**$ 490**	$ 701	**$ 79**	$ 78

[1] No reconciliation has been provided for the effect of the asset limit since there was no effect in either year. For the funded pension plans, the present value of the economic benefits available in the form of reductions in future contributions to the plans is significantly greater than the surplus that would be expected to develop.

(e) Disaggregation of defined benefit obligation

	U.S. Plans				Canadian Plans			
	Pension plans		Retiree welfare plans		Pension plans		Retiree welfare plans	
As at December 31,	**2016**	2015	**2016**	2015	**2016**	2015	**2016**	2015
Active members	**$ 637**	$ 649	**$ 38**	$ 35	**$ 403**	$ 441	**$ 20**	$ 24
Inactive and retired members	**2,528**	2,685	**502**	540	**1,199**	1,048	**122**	114
Total	**$ 3,165**	$ 3,334	**$ 540**	$ 575	**$ 1,602**	$ 1,489	**$ 142**	$ 138

(f) Fair value measurements

The major categories of plan assets and the actual per cent allocation to each category are as follows.

	U.S. Plans[1]				Canadian Plans[2]			
	Pension plans		Retiree welfare plans		Pension plans		Retiree welfare plans	
As at December 31, 2016	Fair value	% of total	Fair value	% of total	Fair value	% of total	Fair value	% of total
Cash and cash equivalents	**$ 15**	**1%**	**$ 19**	**3%**	**$ 21**	**2%**	**$ –**	**–**
Equity securities[3]	**825**	**28%**	**150**	**25%**	**460**	**34%**	**–**	**–**
Debt securities	**1,834**	**62%**	**427**	**71%**	**809**	**60%**	**–**	**–**
Other investments[4]	**259**	**9%**	**7**	**1%**	**54**	**4%**	**–**	**–**
Total	**$ 2,933**	**100%**	**$ 603**	**100%**	**$ 1,344**	**100%**	**$ –**	**–**

	U.S. Plans[1]				Canadian Plans[2]			
	Pension plans		Retiree welfare plans		Pension plans		Retiree welfare plans	
As at December 31, 2015	Fair value	% of total	Fair value	% of total	Fair value	% of total	Fair value	% of total
Cash and cash equivalents	$ 25	1%	$ 21	4%	$ 16	1%	$ –	–
Equity securities[3]	838	28%	161	25%	424	36%	–	–
Debt securities	1,866	63%	446	70%	678	58%	–	–
Other investments[4]	218	8%	7	1%	57	5%	–	–
Total	$ 2,947	100%	$ 635	100%	$ 1,175	100%	$ –	–

(1) All of the U.S. pension and retiree welfare plan assets have daily quoted prices in active markets, except for the private equity, timber and agriculture assets. In the aggregate, the latter assets represent approximately 6% of all U.S. pension and retiree welfare plan assets as at December 31, 2016 (2015 – 6%).

(2) All of the Canadian pension plan assets have daily quoted prices in active markets, except for the real estate, mortgage, and group annuity contract assets. In the aggregate, the latter assets represent approximately 3% of all Canadian pension plan assets as at December 31, 2016 (2015 – 3%).

(3) Equity securities include direct investments in MFC common shares of $1.1 (2015 – $1.0) in the U.S. retiree welfare plan and nil (2015 – nil) in Canada.

(4) Other U.S. plan assets include investment in private equity, timberland and agriculture, and managed futures in 2016. Other Canadian pension plan assets include investment in real estate, mortgages, a global absolute return strategy and a group annuity contract.

(g) Net benefit cost recognized in the Consolidated Statements of Income

Components of the net benefit cost for the pension plans and retiree welfare plans were as follows.

	Pension plans		Retiree welfare plans	
For the years ended December 31,	**2016**	2015	**2016**	2015
Defined benefit current service cost[1]	**$ 52**	$ 54	**$ 1**	$ 1
Defined benefit administrative expenses	**7**	6	**2**	1
Past service cost amendments[2]	**(57)**	–	**–**	–
Past service cost curtailments	**–**	(9)	**–**	–
Service cost	**2**	51	**3**	2
Interest on net defined benefit (asset) liability [1]	**27**	27	**3**	4
Defined benefit cost	**29**	78	**6**	6
Defined contribution cost	**69**	68	**–**	–
Net benefit cost	**$ 98**	$ 146	**$ 6**	$ 6

(1) Includes service and interest costs for the two plans merged into the primary Manulife plan for the period from August 1, 2016 to December 31, 2016.

(2) Past service cost amendments include ($55) reflecting the removal of the advance provision made in prior years for continuing non-contractual, ad-hoc increases in pension for Standard Life retirees.

(h) Re-measurement effects recognized in Other Comprehensive Income

For the years ended December 31,	Pension plans 2016	Pension plans 2015	Retiree welfare plans 2016	Retiree welfare plans 2015
Actuarial gains (losses) on defined benefit obligations:				
Experience	**$ –**	$ –	**$ 2**	$ 2
Demographic assumption changes	**94**	4	**16**	–
Economic assumption changes	**(116)**	202	**(20)**	10
Return on plan assets greater (less) than discount rate	**158**	(167)	**8**	(7)
Total re-measurement effects	**$ 136**	$ 39	**$ 6**	$ 5

(i) Assumptions

The key assumptions used by the Company to determine the defined benefit obligation and net benefit cost for the defined benefit pension plans and retiree welfare plans were as follows.

	U.S. Plans				Canadian Plans			
	Pension plans		Retiree welfare plans		Pension plans		Retiree welfare plans	
For the years ended December 31,	2016	2015	2016	2015	2016	2015	2016	2015
To determine the defined benefit obligation at end of year [1]**:**								
Discount rate	**4.1%**	4.4%	**4.1%**	4.3%	**3.9%**	4.1%	**4.0%**	4.1%
Initial health care cost trend rate[2]	**n/a**	n/a	**8.8%**	9.0%	**n/a**	n/a	**6.0%**	6.1%
To determine the defined benefit cost for the year [1]**:**								
Discount rate	**4.4%**	4.0%	**4.3%**	3.9%	**4.1%**	3.8%	**4.1%**	4.0%
Initial health care cost trend rate[2]	**n/a**	n/a	**9.0%**	8.3%	**n/a**	n/a	**6.1%**	6.3%

[1] Inflation and salary increase assumptions are not shown as they do not materially affect obligations and cost.

[2] The health care cost trend rate used to measure the U.S. based retiree welfare obligation was 8.8% grading to 5.0% for 2032 and years thereafter (2015 – 9.0% grading to 5.0% for 2032) and to measure the net benefit cost was 9.0% grading to 5.0% for 2032 and years thereafter (2015 – 8.3% grading to 5.0% for 2028). In Canada, the rate used to measure the retiree welfare obligation was 6.0% grading to 4.8% for 2026 and years thereafter (2015 – 6.1% grading to 4.8% for 2026) and to measure the net benefit cost was 6.1% grading to 4.8% for 2026 and years thereafter (2015 – 6.3% grading to 4.8% for 2026).

Assumptions regarding future mortality are based on published statistics and mortality tables. The current life expectancies underlying the values of the obligations in the defined benefit pension and retiree welfare plans are as follows.

As at December 31, 2016	U.S.	Canada
Life expectancy (in years) for those currently age 65		
Males	**22.4**	**22.7**
Females	**23.9**	**24.6**
Life expectancy (in years) at age 65 for those currently age 45		
Males	**23.9**	**23.8**
Females	**25.4**	**25.6**

(j) Sensitivity of assumptions on obligation

Assumptions used can have a significant effect on the obligations reported for defined benefit pension and retiree welfare plans. The potential impact on the obligations arising from changes in the key assumptions is set out in the following table. The sensitivities assume all other assumptions are held constant. In actuality, interrelationships with other assumptions may exist.

As at December 31, 2016	Pension plans	Retiree welfare plans
Discount rate:		
Impact of a 1% increase	**$ (452)**	**$ (66)**
Impact of a 1% decrease	**538**	**81**
Health care cost trend rate:		
Impact of a 1% increase	**n/a**	**26**
Impact of a 1% decrease	**n/a**	**(22)**
Mortality rates[1]**:**		
Impact of a 10% decrease	**116**	**18**

[1] If the actuarial estimates of mortality are adjusted in the future to reflect unexpected decreases in mortality, the effect of a 10% decrease in mortality rates at each future age would be an increase in life expectancy at age 65 of 0.9 years for U.S. males and females and 0.8 years for Canadian males and females.

(k) Maturity profile

The weighted average duration (in years) of the defined benefit obligations is as follows.

As at December 31,	Pension plans 2016	Pension plans 2015	Retiree welfare plans 2016	Retiree welfare plans 2015
U.S. plans	**9.2**	9.4	**9.1**	9.0
Canadian plans	**12.7**	13.6	**14.2**	14.2

(l) Cash flows – contributions

Total cash payments for all employee future benefits, comprised of cash contributed by the Company to funded defined benefit pension and retiree welfare plans, cash payments directly to beneficiaries in respect of unfunded pension and retiree welfare plans, and cash contributed to defined contribution pension plans, were as follows.

	Pension plans		Retiree welfare plans	
For the years ended December 31,	**2016**	2015	**2016**	2015
Defined benefit plans	**$ 106**	$ 119	**$ –**	$ 26
Defined contribution plans	**69**	68	**–**	–
Total	**$ 175**	$ 187	**$ –**	$ 26

The Company's best estimate of expected cash payments for employee future benefits for the year ending December 31, 2017 is $100 for defined benefit pension plans, $73 for defined contribution pension plans and $10 for retiree welfare plans.

Note 17 Interests in Structured Entities

In its capacities as an investor and as an investment manager, the Company has relationships with various types of entities designed to generate investment returns and/or fees. The Company also has relationships with entities that are used to facilitate financing for the Company. Some of these entities may have some or all of the following features: control is not readily identified based on voting rights; restricted activities designed to achieve a narrow objective; high amount of leverage; and/or highly structured capital. Such entities are identified as structured entities (individually "SE" or collectively "SEs").

In assessing the significance of a SE for disclosure purposes, the Company considers the nature of its relationship with the SEs including whether they are sponsored by the Company (i.e. initially organized and managed by the Company). In addition, the significance of the relationship with the SE to the Company is assessed including consideration of factors such as the Company's investment in the SE as a percentage of the Company's total investments, returns from it as a percentage of total net investment income, its size as a percentage of total funds under management and the Company's exposure to any other risks from its involvement with the SE.

The Company does not provide financial or other support to its SEs, without having a contractual obligation to do so.

The Company does not disclose its interests in Mezzanine Funds and Collateralized Debt Obligations within this note as these interests are not significant.

(a) Consolidated SEs

Investment SEs

The Company acts as an investment manager of timberlands and timber companies. The Company's general fund and segregated funds invest in many of them. The Company has control over one timberland company which it manages, Hancock Victoria Plantations Holdings PTY Limited ("HVPH"). HVPH is a SE primarily because the Company's employees exercise voting rights over it on behalf of other investors. As at December 31, 2016, the Company's consolidated timber assets relating to HVPH was $920 (2015 – $891). The Company does not provide guarantees to other parties against the risk of loss from HVPH.

Financing SEs

The Company securitizes certain insured and variable rate commercial and residential mortgages and HELOC. This activity is facilitated by consolidated entities that are SEs because their operations are limited to issuing and servicing the Company's capital. Further information regarding the Company's mortgage securitization program is included in note 4.

(b) Unconsolidated SEs

Investment SEs

The table below presents the Company's investment and maximum exposure to loss related to significant unconsolidated investment SEs, some of which are sponsored by the Company. The Company does not provide guarantees to other parties against the risk of loss from these SEs.

	Company's investment[1]		Company's maximum exposure to loss[2]	
As at December 31,	**2016**	2015	**2016**	2015
Leveraged leases[3]	**$ 3,369**	$ 3,549	**$ 3,369**	$ 3,549
Timberland companies[4]	**736**	648	**749**	677
Real Estate companies[5]	**327**	263	**327**	263
Total	**$ 4,432**	$ 4,460	**$ 4,445**	$ 4,489

(1) The Company's investments in these unconsolidated SEs are included in invested assets and the Company's returns from them are included in net investment income and AOCI.

(2) The Company's maximum exposure to loss from each SE is limited to amounts invested in each, plus unfunded capital commitments, if any. The Company's investment commitments are disclosed in note 18. The maximum loss is expected to occur only upon the entity's bankruptcy/liquidation, or as a result of a natural disaster in the case of the timber companies, or foreclosure in the case of affordable housing companies.

(3) These entities are statutory business trusts which use capital provided by the Company and senior debt provided by other parties to finance the acquisition of assets. These assets are leased to third-party lessees under long-term leases. The Company owns equity capital in these business trusts. The Company does not consolidate any of the trusts that are party to the lease arrangements because the Company does not have decision-making power over them.
(4) These entities own and operate timberlands. The Company invests in their equity and debt. The Company's returns include investment income, investment advisory fees, forestry management fees and performance advisory fees. The Company does not control these entities because it either does not have the power to govern their financial and operating policies or does not have significant variable returns from them, or both.
(5) These entities, which include the Manulife U.S. REIT, own and manage commercial real estate. The Company invests in their equity. The Company's returns include investment income, investment management fees, property management fees, acquisition/disposition fees, and leasing fees. The Company does not control these entities because it either does not have the power to govern their financial and operating policies or does not have significant variable returns from them, or both.

Financing SEs

The following table presents the Company's interests and maximum exposure to loss from significant unconsolidated financing SEs.

	Company's interests[1]	
As at December 31,	**2016**	2015
Manulife Finance (Delaware), L.P. [2]	**$ 876**	$ 1,438
Manulife Financial Capital Trust II [3]	**1,000**	1,000
Total	**$ 1,876**	$ 2,438

(1) The Company's interests include amounts borrowed from the SEs and the Company's investment in their subordinate capital, and foreign currency and interest swaps with them, if any.
(2) This entity is a wholly-owned partnership used to facilitate the Company's financing. Refer to notes 11, 12 and 18.
(3) This entity is an open-ended trust that is used to facilitate the Company's financing. Refer to note 12.

(i) Other invested assets

The Company has investment relationships with a variety of other entities ("Other Entities"), which result from its direct investment in their debt and/or equity and which have been assessed for control. This category includes, but is not limited to investments in power and infrastructure, oil and gas, private equity, real estate and agriculture, organized as limited partnerships and limited liability companies. The majority of these Other Entities are not sponsored by the Company. The Company believes that its relationships with these Other Entities are not individually significant. As such, the Company neither provides summary financial data for these entities nor individually assesses whether they are SEs. The Company's maximum exposure to losses as a result of its relationships with Other Entities is limited to its investment in them and amounts committed to be invested but not yet funded. The income that the Company generates from these entities is recorded in net investment income and other comprehensive income. The Company does not provide guarantees to other parties against the risk of loss from these Other Entities.

(ii) Interest in securitized assets

The Company invests in mortgage/asset-backed securities issued by numerous securitization vehicles sponsored by other parties, including private issuers and government sponsored issuers, in order to generate investment returns which are recorded in net investment income. The Company does not own a controlling financial interest in any of the issuers. These securitization vehicles are SEs based on their narrow scope of activities and highly leveraged capital structures. Investments in mortgage/asset-backed securities are reported on the Consolidated Statements of Financial Position as debt securities and private placements, and their fair value and carrying value are disclosed in note 4. The Company's maximum loss from these investments is limited to amounts invested.

Commercial mortgage backed securities ("CMBS") are secured by commercial mortgages and residential mortgage backed securities ("RMBS") are secured by residential mortgages. Asset backed securities ("ABS") may be secured by various underlying assets including credit card receivables, automobile loans and aviation leases. The mortgage/asset backed securities that the Company invests in primarily originate in North America.

The following table outlines the securitized holdings by the type and asset quality.

	2016				2015
As at December 31,	CMBS	RMBS	ABS	Total	Total
AAA	**$ 943**	**$ 73**	**$ 1,253**	**$ 2,269**	$ 2,183
AA	**–**	**–**	**393**	**393**	110
A	**–**	**–**	**592**	**592**	719
BBB	**4**	**–**	**217**	**221**	137
BB and below	**16**	**1**	**21**	**38**	66
Total company exposure	**$ 963**	**$ 74**	**$ 2,476**	**$ 3,513**	$ 3,215

(iii) Mutual funds

The Company sponsors and may invest in a range of public mutual funds with a broad range of investment styles. As sponsor the Company organizes mutual funds that implement investment strategies on behalf of current and future investors. The Company earns fees which are at market rates for providing advisory and administrative services to these mutual funds. Generally, the Company does not control its sponsored mutual funds because either the Company does not have power to govern their financial and operating policies, or its returns in the form of fees and ownership interests are not significant, or both. Certain mutual funds are SEs because their decision making rights are not vested in voting equity interests and their investors are provided with redemption rights.

The Company believes that its relationships with these mutual funds are not individually significant. As such, the Company neither provides summary financial data for these mutual funds nor individually assesses whether they are SEs. The Company's interest in mutual funds is limited to its investment and fees earned, if any. The Company's investments in mutual funds are recorded as part of its investment in public equities within the Consolidated Statements of Financial Position. For information regarding the Company's invested assets, refer to note 4. The Company does not provide guarantees to other parties against the risk of loss from these mutual funds.

As sponsor, the Company's investment in startup capital of mutual funds as at December 31, 2016 was $1,903 (2015 – $1,582). The Company's retail mutual fund assets under management as at December 31, 2016 were $170,930 (2015 – $160,020).

Note 18 Commitments and Contingencies

(a) Legal proceedings

The Company is regularly involved in legal actions, both as a defendant and as a plaintiff. The legal actions where the Company is a party ordinarily involve its activities as a provider of insurance protection or wealth management products, relating to reinsurance, or in its capacity as an investment adviser, employer, or taxpayer. Other life insurers and asset managers, operating in the jurisdictions in which the Company does business, have been subject to a wide variety of other types of actions, some of which resulted in substantial judgments or settlements against the defendants; it is possible that the Company may become involved in similar actions in the future. In addition, government and regulatory bodies in Canada, the United States, Asia and other jurisdictions where the Company conducts business regularly make inquiries and, from time to time, require the production of information or conduct examinations concerning the Company's compliance with, among other things, insurance laws, securities laws, and laws governing the activities of broker-dealers.

Two class actions against the Company were certified and pending in Quebec and Ontario. The actions were based on allegations that the Company failed to meet its disclosure obligations related to its exposure to market price risk in its segregated funds and variable annuity guaranteed products. On January 31, 2017, we announced we reached an agreement to settle both of these class actions for a total payment of $69 million. The entire payment is covered by insurance and the Company made no admission of liability. The settlement agreement is subject to approval by both the Ontario and Quebec Courts.

Two putative class actions against John Hancock Life Insurance Company (U.S.A.) ("JHUSA") are pending, one in New York and one in California, in which claims are made that JHUSA breached, and continues to breach, the contractual terms of certain universal life policies issued between approximately 1990 and 2006 by including impermissible charges in its cost of insurance (COI) calculations. The Company believes that its COI calculations have been, and continue to be, in accordance with the terms of the policies and intends to vigorously defend these actions. Both cases are in the discovery stage and it is premature to attempt to predict any outcome or range of outcomes for these matters.

(b) Investment commitments

In the normal course of business, various investment commitments are outstanding which are not reflected in the Consolidated Financial Statements. There were $7,505 (2015 – $5,680) of outstanding investment commitments as at December 31, 2016, of which $268 (2015 – $172) mature in 30 days, $2,665 (2015 – $1,743) mature in 31 to 365 days and $4,572 (2015 – $3,765) mature after one year.

(c) Letters of credit

In the normal course of business, third-party relationship banks issue letters of credit on the Company's behalf. The Company's businesses utilize letters of credit for which third parties are the beneficiaries, as well as for affiliate reinsurance transactions between its subsidiaries. As at December 31, 2016, letters of credit for which third parties are beneficiary, in the amount of $83 (2015 – $109), were outstanding.

(d) Guarantees

(i) Guarantees regarding Manulife Finance (Delaware), L.P. ("MFLP")

MFC has guaranteed the payment of amounts on the $650 subordinated debentures due on December 15, 2041 issued by MFLP, a wholly-owned unconsolidated partnership.

(ii) Guarantees regarding The Manufacturers Life Insurance Company

On January 29, 2007, MFC provided a subordinated guarantee, as amended and restated on January 13, 2017, of Class A and Class B Shares of MLI and any other class of preferred shares that rank on a parity with Class A Shares or Class B Shares of MLI. For the following subordinated debentures issued by MLI, MFC has provided a subordinated guarantee on the day of issuance: $500 issued on February 17, 2012; $200 issued on February 25, 2013; $250 issued on November 29, 2013; $500 issued on February 21, 2014; $500 issued on December 1, 2014; $750 issued on March 10, 2015; $350 issued on June 1, 2015; and $1,000 issued on November 20, 2015.

On July 1, 2015, MFC provided a subordinated guarantee of $400 for the subordinated debentures assumed by MLI as part of the Standard Life acquisition on the wind up of the Standard Life Assurance Company of Canada ("SCDA") on that date. SCDA was acquired by MLI on January 30, 2015.

The following table sets forth certain condensed consolidated financial information for MFC and MFLP.

Condensed Consolidated Statements of Income Information

For the year ended December 31, 2016	MFC (Guarantor)	MLI consolidated	Other subsidiaries of MFC on a combined basis	Consolidating adjustments	Total consolidated amounts	MFLP
Total revenue	**$ 518**	**$ 53,051**	**$ 1,941**	**$ (2,173)**	**$ 53,337**	**$ 44**
Net income (loss) attributed to shareholders	**2,929**	**3,455**	**(898)**	**(2,557)**	**2,929**	**(1)**

For the year ended December 31, 2015	MFC (Guarantor)	MLI consolidated	Other subsidiaries of MFC on a combined basis	Consolidating adjustments	Total consolidated amounts	MFLP
Total revenue	$ 401	$ 33,877	$ 1,491	$ (1,339)	$ 34,430	$ 100
Net income (loss) attributed to shareholders	2,191	1,983	118	(2,101)	2,191	28

Condensed Consolidated Statements of Financial Position

As at December 31, 2016	MFC (Guarantor)	MLI consolidated	Other subsidiaries of MFC on a combined basis	Consolidating adjustments	Total consolidated amounts	MFLP
Invested assets	**$ 161**	**$ 315,201**	**$ 6,507**	**$ –**	**$ 321,869**	**$ 6**
Total other assets	**48,073**	**99,718**	**15,136**	**(79,292)**	**83,635**	**1,085**
Segregated funds net assets	**–**	**315,177**	**–**	**–**	**315,177**	**–**
Insurance contract liabilities	**–**	**296,896**	**19,122**	**(18,513)**	**297,505**	**–**
Investment contract liabilities	**–**	**3,275**	**–**	**–**	**3,275**	**–**
Segregated funds net liabilities	**–**	**315,177**	**–**	**–**	**315,177**	**–**
Total other liabilities	**6,402**	**66,999**	**1,539**	**(13,039)**	**61,901**	**882**

As at December 31, 2015	MFC (Guarantor)	MLI consolidated	Other subsidiaries of MFC on a combined basis	Consolidating adjustments	Total consolidated amounts	MFLP
Invested assets	$ 122	$ 301,645	$ 5,739	$ –	$ 307,506	$ 5
Total other assets	43,248	97,926	15,491	(74,549)	82,116	1,651
Segregated funds net assets	–	313,249	–	–	313,249	–
Insurance contract liabilities	–	284,647	18,197	(17,556)	285,288	–
Investment contract liabilities	–	3,497	–	–	3,497	–
Segregated funds net liabilities	–	313,249	–	–	313,249	–
Total other liabilities	2,211	69,334	1,445	(14,091)	58,899	1,447

(iii) Guarantees regarding John Hancock Life Insurance Company (U.S.A.) ("JHUSA")

Details of guarantees regarding certain securities issued or to be issued by JHUSA are outlined in note 23.

(e) Pledged assets

In the normal course of business, the Company pledges its assets in respect of liabilities incurred, strictly for the purpose of providing collateral for the counterparty. In the event of the Company's default, the counterparty is entitled to apply the collateral in order to settle the liability. The pledged assets are returned to the Company if the underlying transaction is terminated or, in the case of derivatives, if there is a decrease in the net exposure due to market value changes.

The amounts pledged were as follows.

	2016		2015	
As at December 31,	Debt securities	Other	Debt securities	Other
In respect of:				
Derivatives	**$ 4,678**	**$ 99**	$ 4,619	$ 20
Regulatory requirements	**409**	**78**	445	82
Real estate	**–**	**22**	–	41
Repurchase agreements	**255**	**–**	268	–
Non-registered retirement plans in trust	**–**	**464**	–	455
Other	**3**	**174**	2	139
Total	**$ 5,345**	**$ 837**	$ 5,334	$ 737

(f) Lease obligations

The Company has a number of operating lease obligations, primarily for the use of office space. The aggregate future minimum lease payments under non-cancelable operating leases are $966 (2015 – $1,056). Payments by year are included in the "Risk Management" section of the Company's 2016 MD&A under Liquidity Risk.

(g) Participating business

In some territories where the Company maintains participating accounts, there are regulatory restrictions on the amounts of profit that can be transferred to shareholders. Where applicable, these restrictions generally take the form of a fixed percentage of policyholder dividends. For participating businesses operating as separate "closed blocks", transfers are governed by the terms of MLI's and John Hancock Mutual Life Insurance Company's plans of demutualization.

Note 19 Segmented Information

The Company's reporting segments are Asia, Canadian and U.S. Divisions and the Corporate and Other segment. Each division has profit and loss responsibility and develops products, services and distribution strategies based on the profile of its business and the needs of its market. The significant product and service offerings of each segment are as follows:

Protection (Asia, Canadian and U.S. Divisions). Offers a variety of individual life insurance and individual and group long-term care insurance. Products are distributed through multiple distribution channels, including insurance agents, brokers, banks, financial planners and direct marketing.

Wealth and Asset Management (Asia, Canadian and U.S. Divisions). Offers pension contracts and mutual fund products and services. These businesses also offer a variety of retirement products to group benefit plans. These businesses distribute products through multiple distribution channels, including insurance agents and brokers affiliated with the Company, securities brokerage firms, financial planners, pension plan sponsors, pension plan consultants and banks.

Other Wealth (Asia, Canadian and U.S. Divisions). Includes annuities, single premium and banking products. Manulife Bank of Canada offers a variety of deposit and credit products to Canadian customers. Annuity contracts provide non-guaranteed, partially guaranteed and fully guaranteed investment options through general and separate account products. These businesses distribute products through multiple distribution channels, including insurance agents and brokers affiliated with the Company, financial planners and banks.

Corporate and Other Segment. Comprised of investment performance on assets backing capital, net of amounts allocated to operating divisions and financing costs; external asset management business; Property and Casualty ("P&C") Reinsurance Business; as well as run-off reinsurance operations including variable annuities and accident and health.

Certain allocation methodologies are employed in the preparation of segmented financial information. Indirect expenses are allocated to business segments using allocation formulas applied on a consistent basis, while capital is apportioned to the Company's business segments using a risk based methodology. The Consolidated Statements of Income impact of changes in actuarial methods and assumptions (refer to note 8) is reported in the Corporate and Other segment.

The 2015 assets and earnings (net investment income and income tax recovery (expense)) on assets backing capital allocated to each operating segment have been reclassified to align with the methodology used in 2016.

By segment

As at and for the year ended December 31, 2016	Asia Division	Canadian Division	U.S. Division	Corporate and Other	Total
Revenue					
Premium income					
Life and health insurance	$ 12,111	$ 4,366	$ 6,703	$ 88	$ 23,268
Annuities and pensions	3,474	606	284	–	4,364
Net premium income	15,585	4,972	6,987	88	27,632
Net investment income	2,143	4,255	7,980	146	14,524
Other revenue	1,566	3,480	5,591	544	11,181
Total revenue	19,294	12,707	20,558	778	53,337
Contract benefits and expenses					
Life and health insurance	10,435	5,207	10,829	806	27,277
Annuities and pensions	2,913	1,179	2,765	–	6,857
Net benefits and claims	13,348	6,386	13,594	806	34,134
Interest expense	146	305	45	517	1,013
Other expenses	4,241	4,279	5,619	722	14,861
Total contract benefits and expenses	17,735	10,970	19,258	2,045	50,008
Income (loss) before income taxes	1,559	1,737	1,300	(1,267)	3,329
Income tax recovery (expense)	(243)	(250)	(166)	463	(196)
Net income (loss)	1,316	1,487	1,134	(804)	3,133
Less net income (loss) attributed to:					
Non-controlling interests	115	–	–	28	143
Participating policyholders	60	1	–	–	61
Net income (loss) attributed to shareholders	$ 1,141	$ 1,486	$ 1,134	$ (832)	$ 2,929
Total assets	$ 92,783	$ 214,467	$ 384,010	$ 29,421	$ 720,681

As at and for the year ended December 31, 2015	Asia Division	Canadian Division	U.S. Division	Corporate and Other	Total
Revenue					
Premium income					
Life and health insurance	$ 8,707	$ 3,926	$ 6,997	$ 90	$ 19,720
Annuities and pensions	2,788	504	913	–	4,205
Premiums ceded, net of commission and additional consideration relating to Closed Block reinsurance transaction (Note 3)	–	–	(7,996)	–	(7,996)
Net premium income	11,495	4,430	(86)	90	15,929
Net investment income	1,073	2,511	4,685	134	8,403
Other revenue	1,434	3,124	5,350	190	10,098
Total revenue	14,002	10,065	9,949	414	34,430
Contract benefits and expenses					
Life and health insurance	6,724	4,201	(124)	624	11,425
Annuities and pensions	2,488	584	2,844	–	5,916
Net benefits and claims	9,212	4,785	2,720	624	17,341
Interest expense	124	471	59	447	1,101
Other expenses	3,272	4,057	5,273	768	13,370
Total contract benefits and expenses	12,608	9,313	8,052	1,839	31,812
Income (loss) before income taxes	1,394	752	1,897	(1,425)	2,618
Income tax recovery (expense)	(175)	(279)	(437)	563	(328)
Net income (loss)	1,219	473	1,460	(862)	2,290
Less net income (loss) attributed to:					
Non-controlling interests	77	–	–	(8)	69
Participating policyholders	37	(7)	–	–	30
Net income (loss) attributed to shareholders	$ 1,105	$ 480	$ 1,460	$ (854)	$ 2,191
Total assets	$ 82,584	$ 202,419	$ 385,011	$ 32,857	$ 702,871

The results of the Company's business segments differ from geographic segmentation primarily as a consequence of segmenting the results of the Company's Corporate and Other segment into the different geographic segments to which its businesses pertain.

By geographic location

For the year ended December 31, 2016	Asia	Canada	U.S.	Other	Total
Revenue					
Premium income					
Life and health insurance	**$ 12,184**	**$ 3,909**	**$ 6,705**	**$ 470**	**$ 23,268**
Annuities and pensions	**3,474**	**606**	**284**	**–**	**4,364**
Net premium income	**15,658**	**4,515**	**6,989**	**470**	**27,632**
Net investment income	**2,368**	**4,096**	**7,880**	**180**	**14,524**
Other revenue	**1,608**	**3,443**	**6,105**	**25**	**11,181**
Total revenue	**$ 19,634**	**$ 12,054**	**$ 20,974**	**$ 675**	**$ 53,337**

For the year ended December 31, 2015	Asia	Canada	U.S.	Other	Total
Revenue					
Premium income					
Life and health insurance	$ 8,776	$ 3,454	$ 6,999	$ 491	$ 19,720
Annuities and pensions	2,788	504	913	–	4,205
Premiums ceded, net of commission and additional consideration relating to Closed Block reinsurance transaction (Note 3)	–	–	(7,996)	–	(7,996)
Net premium income	11,564	3,958	(84)	491	15,929
Net investment income	1,128	2,884	4,273	118	8,403
Other revenue	1,455	2,891	5,740	12	10,098
Total revenue	$ 14,147	$ 9,733	$ 9,929	$ 621	$ 34,430

Note 20 Related Parties

(a) Transactions with related parties

Related party transactions have been in the normal course of business and taken place at terms that would exist in arm's-length transactions.

(b) Transactions with certain related parties

Transactions with MFLP, a wholly owned unconsolidated partnership, and MFCT, a wholly owned unconsolidated trust, are described in note 11, 12 and 17.

(c) Compensation of key management personnel

The Company's key management personnel are those personnel who have the authority and responsibility for planning, directing and controlling the activities of the Company. Directors (both executive and non-executive) and senior management are considered key personnel. Accordingly, the summary of compensation of key management personnel is as follows.

For the years ended December 31,	2016	2015
Short-term employee benefits	$ 33	$ 34
Post-employment benefits	3	3
Share-based payments	44	44
Termination benefits	4	1
Other long-term benefits	3	3
Total	**$ 87**	$ 85

Note 21 Subsidiaries

The following is a list of Manulife's directly and indirectly held major operating subsidiaries.

As at December 31, 2016 (100% owned unless otherwise noted in brackets beside company name)	Address	Description
The Manufacturers Life Insurance Company	Toronto, Canada	Leading Canadian-based financial services company that offers a diverse range of financial protection products and wealth management services
Manulife Holdings (Alberta) Limited	Calgary, Canada	Holding company
John Hancock Financial Corporation	Wilmington, Delaware, U.S.A.	Holding company
The Manufacturers Investment Corporation	Michigan, U.S.A.	Holding company
John Hancock Life Insurance Company (U.S.A.)	Michigan, U.S.A.	U.S. life insurance company licensed in all states, except New York
John Hancock Subsidiaries LLC	Wilmington, Delaware, U.S.A.	Holding company
John Hancock Financial Network, Inc.	Boston, Massachusetts, U.S.A.	Financial services distribution organization
John Hancock Advisers, LLC	Boston, Massachusetts, U.S.A.	Investment advisor
John Hancock Funds, LLC	Boston, Massachusetts, U.S.A.	Broker-dealer
Manulife Asset Management (US) LLC	Wilmington, Delaware, U.S.A.	Asset management company
Hancock Natural Resource Group, Inc.	Boston, Massachusetts, U.S.A.	Manager of globally diversified timberland and agricultural portfolios
John Hancock Life Insurance Company of New York	New York, U.S.A.	U.S. life insurance company licensed in New York
John Hancock Investment Management Services, LLC	Boston, Massachusetts, U.S.A.	Investment advisor
John Hancock Life & Health Insurance Company	Boston, Massachusetts, U.S.A.	U.S. life insurance company licensed in all states
John Hancock Distributors LLC	Wilmington, Delaware, U.S.A.	Broker-dealer
John Hancock Insurance Agency, Inc.	Wilmington, Delaware, U.S.A.	Insurance agency
John Hancock Insurance Company of Vermont	Vermont, U.S.A.	Captive insurance subsidiary
Manulife Reinsurance Limited	Hamilton, Bermuda	Provides life and financial reinsurance to affiliates
Manulife Reinsurance (Bermuda) Limited	Hamilton, Bermuda	Provides life and annuity reinsurance to affiliates
Manulife Bank of Canada	Waterloo, Canada	Provides integrated banking products and service options not available from an insurance company
Manulife Asset Management Holdings (Canada) Inc.	Toronto, Canada	Holding company
Manulife Asset Management Limited	Toronto, Canada	Provides investment counseling, portfolio and mutual fund management in Canada
First North American Insurance Company	Toronto, Canada	Property and casualty insurance company
NAL Resources Management Limited	Calgary, Canada	Management company for oil and gas properties

As at December 31, 2016 (100% owned unless otherwise noted in brackets beside company name)	Address	Description
Manulife Resources Limited	Calgary, Canada	Holds oil and gas properties
Manulife Property Limited Partnership	Toronto, Canada	Holds oil and gas royalties
Manulife Western Holdings Limited Partnership	Calgary, Canada	Holds oil and gas properties
Manulife Property Limited Partnership II	Toronto, Canada	Holds oil and gas royalties and foreign bonds and equities
Manulife Securities Investment Services Inc.	Oakville, Canada	Mutual fund dealer for Canadian operations
Manulife Holdings (Bermuda) Limited	Hamilton, Bermuda	Holding company
Manufacturers P & C Limited	St. Michael, Barbados	Provides property and casualty reinsurance
Manulife Financial Asia Limited	Hong Kong, China	Holding company
Manulife (Cambodia) PLC	Phnom Penh, Cambodia	Life insurance company
Manufacturers Life Reinsurance Limited	St. Michael, Barbados	Provides life and annuity reinsurance to affiliates
Manulife (Vietnam) Limited	Ho Chi Minh City, Vietnam	Life insurance company
Manulife Asset Management (Vietnam) Company Limited	Ho Chi Minh City, Vietnam	Fund management company
Manulife International Holdings Limited	Hong Kong, China	Holding company
Manulife (International) Limited	Hong Kong, China	Life insurance company
Manulife-Sinochem Life Insurance Co. Ltd. (51%)	Shanghai, China	Life insurance company
Manulife Asset Management International Holdings Limited	Hong Kong, China	Holding company
Manulife Asset Management (Hong Kong) Limited	Hong Kong, China	Investment management and advisory company marketing mutual funds
Manulife Asset Management (Taiwan) Co., Ltd.	Taipei, Taiwan	Asset management company
Manulife Life Insurance Company	Tokyo, Japan	Life insurance company
Manulife Asset Management (Japan) Limited	Tokyo, Japan	Investment management and advisory company and mutual fund business
Manulife Insurance (Thailand) Public Company Limited (91.9%) [1]	Bangkok, Thailand	Life insurance company
Manulife Asset Management (Thailand) Company Limited (94.2%) [1]	Bangkok, Thailand	Investment management company
Manulife Holdings Berhad (59.5%)	Kuala Lumpur, Malaysia	Holding company
Manulife Insurance Berhad (59.5%)	Kuala Lumpur, Malaysia	Life insurance company
Manulife Asset Management Services Berhad (59.5%)	Kuala Lumpur, Malaysia	Asset management company
Manulife (Singapore) Pte. Ltd.	Singapore	Life insurance company
Manulife Asset Management (Singapore) Pte. Ltd.	Singapore	Asset management company
The Manufacturers Life Insurance Co. (Phils.), Inc.	Makati City, Philippines	Life insurance company
Manulife Chinabank Life Assurance Corporation (60%)	Makati City, Philippines	Life insurance company
PT Asuransi Jiwa Manulife Indonesia	Jakarta, Indonesia	Life insurance company
PT Manulife Aset Manajemen Indonesia	Jakarta, Indonesia	Investment management company marketing mutual funds and discretionary funds
Manulife Asset Management (Europe) Limited	London, England	Investment management company for Manulife Financial's international funds
Manulife Assurance Company of Canada	Toronto, Canada	Life insurance company
EIS Services (Bermuda) Limited	Hamilton, Bermuda	Investment holding company
Berkshire Insurance Services Inc.	Toronto, Canada	Investment holding company
JH Investments (Delaware) LLC	Boston, Massachusetts, U.S.A.	Investment holding company
Manulife Securities Incorporated	Oakville, Canada	Investment dealer
Manulife Asset Management (North America) Limited	Toronto, Canada	Investment advisor
Regional Power Inc.	Mississauga, Canada	Developer and operator of hydro-electric power projects
John Hancock Reassurance Company Ltd.	Hamilton, Bermuda	Provides life, annuity and long-term care reinsurance to affiliates

[1] MFC voting rights percentages are the same as the ownership percentages except for Manulife Insurance (Thailand) Public Company Limited and Manulife Asset Management (Thailand) Company Limited where MFC's voting rights are 98.0% and 98.5% respectively.

Note 22 Segregated Funds

The Company manages a number of segregated funds on behalf of policyholders. Policyholders are provided the opportunity to invest in different categories of segregated funds that respectively hold a range of underlying investments. The Company retains legal title to the underlying investments; however, returns from these investments belong to the policyholders. Accordingly, the Company does not bear the risk associated with these assets outside of guarantees offered on certain variable life and annuity products. The “Risk Management” section of the Company’s 2016 MD&A provides information regarding variable annuity and segregated fund guarantees.

The composition of net assets by categories of segregated funds was within the following ranges for the years ended December 31, 2016 and 2015.

	Ranges in per cent	
Type of fund	**2016**	2015
Money market funds	**2 to 3%**	2 to 3%
Fixed income funds	**14 to 15%**	12 to 16%
Balanced funds	**22 to 24%**	23 to 27%
Equity funds	**59 to 61%**	56 to 59%

Money market funds consist of investments that have a term to maturity of less than one year. Fixed income funds primarily consist of investments in fixed grade income securities and may contain smaller investments in diversified equities or high-yield bonds. Relative to fixed income funds, balanced funds consist of fixed income securities and a larger equity investment component. The types of equity funds available to policyholders range from low volatility equity funds to aggressive equity funds. Equity funds invest in a varying mix of Canadian, U.S. and global equities.

The underlying investments of the segregated funds consist of both individual securities and mutual funds (collectively “net assets”), some of which may be considered to be structured entities. The carrying value and change in segregated funds net assets are as follows.

Segregated funds net assets

As at December 31,	**2016**	2015
Investments at market value		
Cash and short-term securities	**$ 4,524**	$ 4,370
Debt securities	**15,651**	15,269
Equities	**12,458**	13,079
Mutual funds	**278,966**	277,015
Other investments	**4,552**	4,538
Accrued investment income	**201**	205
Other assets and liabilities, net	**(644)**	(729)
Total segregated funds net assets	**$ 315,708**	$ 313,747
Composition of segregated funds net assets		
Held by policyholders	**$ 315,177**	$ 313,249
Held by the Company	**531**	498
Total segregated funds net assets	**$ 315,708**	$ 313,747

Total segregated funds net assets are presented separately on the Consolidated Statements of Financial Position. Fair value related information of segregated funds is disclosed in note 4(g).

Changes in segregated funds net assets

For the years ended December 31,	2016	2015
Net policyholder cash flow		
Deposits from policyholders	**$ 33,130**	$ 32,785
Net transfers to general fund	**(878)**	(798)
Payments to policyholders	**(39,731)**	(41,174)
	(7,479)	(9,187)
Investment related		
Interest and dividends	**15,736**	17,487
Net realized and unrealized investment gains (losses)	**4,097**	(16,080)
	19,833	1,407
Other		
Management and administration fees	**(4,386)**	(4,337)
Acquired from Standard Life	**–**	32,171
Impact of changes in foreign exchange rates	**(6,007)**	36,959
	(10,393)	64,793
Net additions	**1,961**	57,013
Segregated funds net assets, beginning of year	**313,747**	256,734
Segregated funds net assets, end of year	**$ 315,708**	$ 313,747

Segregated funds assets may be exposed to a variety of financial and other risks. These risks are primarily mitigated by investment guidelines that are actively monitored by professional and experienced portfolio advisors. The Company is not exposed to these risks beyond the liabilities related to the guarantees associated with certain variable life and annuity products. Accordingly, the Company's exposure to loss from segregated fund products is limited to the value of these guarantees.

These guarantee liabilities are recorded within the Company's insurance contract liabilities. Assets supporting these guarantees are recognized in invested assets according to their investment type. The "Risk Management" section of the Company's 2016 MD&A provides information regarding the risks associated with variable annuity and segregated fund guarantees.

Note 23 Information Provided in Connection with Investments in Deferred Annuity Contracts and *Signature*Notes Issued or Assumed by John Hancock Life Insurance Company (U.S.A.)

The following condensed consolidating financial information, presented in accordance with IFRS, and the related disclosure have been included in these Consolidated Financial Statements with respect to JHUSA in compliance with Regulation S-X and Rule 12h-5 of the United States Securities and Exchange Commission (the "Commission"). These financial statements are incorporated by reference in the MFC and its subsidiaries registration statements that are described below and which relate to MFC's guarantee of certain securities to be issued by its subsidiaries.

JHUSA maintains a book of deferred annuity contracts that feature a market value adjustment and are registered with the Commission. The deferred annuity contracts contain variable investment options and fixed investment period options. The fixed investment period options enable the participant to invest fixed amounts of money for fixed terms at fixed interest rates, subject to a market value adjustment if the participant desires to terminate a fixed investment period before its maturity date. The annuity contract provides for the market value adjustment to keep the parties whole with respect to the fixed interest bargain for the entire fixed investment period. These fixed investment period options that contain a market value adjustment feature are referred to as "MVAs".

JHUSA may also sell medium-term notes to retail investors under its *Signature*Notes program.

Effective December 31, 2009, John Hancock Variable Life Insurance Company (the "Variable Company") and John Hancock Life Insurance Company (the "Life Company") merged with and into JHUSA. In connection with the mergers, JHUSA assumed the Variable Company's rights and obligations with respect to the MVAs issued by the Variable Company and the Life Company's rights and obligations with respect to the *Signature*Notes issued by the Life Company.

MFC fully and unconditionally guaranteed the payment of JHUSA's obligations under the MVAs and under the *Signature*Notes (including the MVAs and *Signature*Notes assumed by JHUSA in the merger), and such MVAs and the *Signature*Notes were registered with the Commission. The *Signature*Notes and MVAs assumed or issued by JHUSA are collectively referred to in this note as the "Guaranteed Securities". JHUSA is, and each of the Variable Company and the Life Company was, a wholly owned subsidiary of MFC.

MFC's guarantees of the Guaranteed Securities are unsecured obligations of MFC, and are subordinated in right of payment to the prior payment in full of all other obligations of MFC, except for other guarantees or obligations of MFC which by their terms are designated as ranking equally in right of payment with or subordinate to MFC's guarantees of the Guaranteed Securities.

The laws of the State of New York govern MFC's guarantees of the *Signature*Notes issued or assumed by JHUSA and the laws of the Commonwealth of Massachusetts govern MFC's guarantees of the MVAs issued or assumed by JHUSA. MFC has consented to the jurisdiction of the courts of New York and Massachusetts. However, because a substantial portion of MFC's assets are located outside the United States, the assets of MFC located in the United States may not be sufficient to satisfy a judgment given by a federal or

state court in the United States to enforce the subordinate guarantees. In general, the federal laws of Canada and the laws of the Province of Ontario, where MFC's principal executive offices are located, permit an action to be brought in Ontario to enforce such a judgment provided that such judgment is subsisting and unsatisfied for a fixed sum of money and not void or voidable in the United States and a Canadian court will render a judgment against MFC in a certain dollar amount, expressed in Canadian dollars, subject to customary qualifications regarding fraud, violations of public policy, laws limiting the enforcement of creditor's rights and applicable statutes of limitations on judgments. There is currently no public policy in effect in the Province of Ontario that would support avoiding the recognition and enforcement in Ontario of a judgment of a New York or Massachusetts court on MFC's guarantees of the *Signature*Notes issued or assumed by JHUSA or a Massachusetts court on guarantees of the MVAs issued or assumed by JHUSA.

MFC is a holding company. MFC's assets primarily consist of investments in its subsidiaries. MFC's cash flows primarily consist of dividends and interest payments from its operating subsidiaries, offset by expenses and shareholder dividends and MFC stock repurchases. As a holding company, MFC's ability to meet its cash requirements, including, but not limited to, paying any amounts due under its guarantees, substantially depends upon dividends from its operating subsidiaries.

These subsidiaries are subject to certain regulatory restrictions under laws in Canada, the United States and certain other countries, which may limit their ability to pay dividends or make contributions or loans to MFC. For example, some of MFC's subsidiaries are subject to restrictions prescribed by the ICA on their ability to declare and pay dividends. The restrictions related to dividends imposed by the ICA are described in note 14.

In the United States, insurance laws in Michigan, New York, Massachusetts and Vermont, the jurisdictions in which certain of MFC's U.S. insurance company subsidiaries are domiciled, impose general limitations on the payment of dividends and other upstream distributions or loans by these insurance subsidiaries. These limitations are described in note 14.

In Asia, the insurance laws of the jurisdictions in which MFC operates either provide for specific restrictions on the payment of dividends or other distributions or loans by subsidiaries or impose solvency or other financial tests, which could affect the ability of subsidiaries to pay dividends in certain circumstances.

There can be no assurance that any current or future regulatory restrictions in Canada, the United States or Asia will not impair MFC's ability to meet its cash requirements, including, but not limited to, paying any amounts due under its guarantee.

The following condensed consolidating financial information, presented in accordance with IFRS, reflects the effects of the mergers and is provided in compliance with Regulation S-X and in accordance with Rule 12h-5 of the Commission.

Condensed Consolidated Statement of Financial Position

As at December 31, 2016	MFC (Guarantor)	JHUSA (Issuer)	Other subsidiaries	Consolidation adjustments	Consolidated MFC
Assets					
Invested assets	**$ 161**	**$ 109,063**	**$ 213,043**	**$ (398)**	**$ 321,869**
Investments in unconsolidated subsidiaries	**47,758**	**6,457**	**17,504**	**(71,719)**	**–**
Reinsurance assets	**–**	**51,537**	**10,069**	**(26,654)**	**34,952**
Other assets	**315**	**28,718**	**41,723**	**(22,073)**	**48,683**
Segregated funds net assets	**–**	**174,917**	**142,400**	**(2,140)**	**315,177**
Total assets	**$ 48,234**	**$ 370,692**	**$ 424,739**	**$ (122,984)**	**$ 720,681**
Liabilities and equity					
Insurance contract liabilities	**$ –**	**$ 147,504**	**$ 177,524**	**$ (27,523)**	**$ 297,505**
Investment contract liabilities	**–**	**1,251**	**2,027**	**(3)**	**3,275**
Other liabilities	**252**	**28,892**	**41,653**	**(21,772)**	**49,025**
Long-term debt	**5,689**	**–**	**7**	**–**	**5,696**
Capital instruments	**461**	**627**	**6,226**	**(134)**	**7,180**
Segregated funds net liabilities	**–**	**174,917**	**142,400**	**(2,140)**	**315,177**
Shareholders' equity	**41,832**	**17,501**	**53,912**	**(71,413)**	**41,832**
Participating policyholders' equity	**–**	**–**	**248**	**–**	**248**
Non-controlling interests	**–**	**–**	**742**	**1**	**743**
Total liabilities and equity	**$ 48,234**	**$ 370,692**	**$ 424,739**	**$ (122,984)**	**$ 720,681**

Condensed Consolidated Statement of Financial Position

As at December 31, 2015	MFC (Guarantor)	JHUSA (Issuer)	Other subsidiaries	Consolidation adjustments	Consolidated MFC
Assets					
Invested assets	$ 122	$ 108,736	$ 199,031	$ (383)	$ 307,506
Investments in unconsolidated subsidiaries	42,919	6,684	17,653	(67,256)	–
Reinsurance assets	–	52,027	9,579	(26,180)	35,426
Other assets	329	30,271	39,026	(22,936)	46,690
Segregated funds net assets	–	178,421	136,753	(1,925)	313,249
Total assets	$ 43,370	$ 376,139	$ 402,042	$ (118,680)	$ 702,871
Liabilities and equity					
Insurance contract liabilities	$ –	$ 147,401	$ 164,928	$ (27,041)	$ 285,288
Investment contract liabilities	–	1,324	2,177	(4)	3,497
Other liabilities	524	30,131	40,939	(22,243)	49,351
Long-term debt	1,687	–	16	150	1,853
Capital instruments	–	1,209	7,185	(699)	7,695
Segregated funds net liabilities	–	178,421	136,753	(1,925)	313,249
Shareholders' equity	41,159	17,653	49,266	(66,919)	41,159
Participating policyholders' equity	–	–	187	–	187
Non-controlling interests	–	–	591	1	592
Total liabilities and equity	$ 43,370	$ 376,139	$ 402,042	$ (118,680)	$ 702,871

Condensed Consolidated Statement of Income

For the year ended December 31, 2016	MFC (Guarantor)	JHUSA (Issuer)	Other subsidiaries	Consolidation adjustments	Consolidated MFC
Revenue					
Net premium income	**$ –**	**$ 5,021**	**$ 22,611**	**$ –**	**$ 27,632**
Net investment income (loss)	**475**	**6,191**	**9,102**	**(1,244)**	**14,524**
Net other revenue	**43**	**2,569**	**11,108**	**(2,539)**	**11,181**
Total revenue	**518**	**13,781**	**42,821**	**(3,783)**	**53,337**
Contract benefits and expenses					
Net benefits and claims	**–**	**10,340**	**24,748**	**(954)**	**34,134**
Commissions, investment and general expenses	**11**	**3,272**	**13,016**	**(1,840)**	**14,459**
Other expenses	**259**	**59**	**2,086**	**(989)**	**1,415**
Total contract benefits and expenses	**270**	**13,671**	**39,850**	**(3,783)**	**50,008**
Income (loss) before income taxes	**248**	**110**	**2,971**	**–**	**3,329**
Income tax (expense) recovery	**28**	**251**	**(475)**	**–**	**(196)**
Income (loss) after income taxes	**276**	**361**	**2,496**	**–**	**3,133**
Equity in net income (loss) of unconsolidated subsidiaries	**2,653**	**211**	**572**	**(3,436)**	**–**
Net income (loss)	**$ 2,929**	**$ 572**	**$ 3,068**	**$ (3,436)**	**$ 3,133**
Net income (loss) attributed to:					
Non-controlling interests	**$ –**	**$ –**	**$ 143**	**$ –**	**$ 143**
Participating policyholders	**–**	**(48)**	**61**	**48**	**61**
Shareholders	**2,929**	**620**	**2,864**	**(3,484)**	**2,929**
	$ 2,929	**$ 572**	**$ 3,068**	**$ (3,436)**	**$ 3,133**

Condensed Consolidated Statement of Income

For the year ended December 31, 2015	MFC (Guarantor)	JHUSA (Issuer)	Other subsidiaries	Consolidation adjustments	Consolidated MFC
Revenue					
Net premium income prior to Closed Block reinsurance	$ –	$ 3,161	$ 20,764	$ –	$ 23,925
Premiums ceded, net of commission and additional consideration relating to Closed Block reinsurance transaction	–	(6,813)	(1,766)	583	(7,996)
Net premium income	–	(3,652)	18,998	583	15,929
Net investment income (loss)	476	4,014	4,837	(924)	8,403
Net other revenue	(75)	2,110	11,069	(3,006)	10,098
Total revenue	401	2,472	34,904	(3,347)	34,430
Contract benefits and expenses					
Net benefits and claims	–	(1,146)	19,540	(1,053)	17,341
Commissions, investment and general expenses	19	3,158	11,949	(2,114)	13,012
Other expenses	185	267	1,187	(180)	1,459
Total contract benefits and expenses	204	2,279	32,676	(3,347)	31,812
Income (loss) before income taxes	197	193	2,228	–	2,618
Income tax (expense) recovery	(57)	276	(547)	–	(328)
Income (loss) after income taxes	140	469	1,681	–	2,290
Equity in net income (loss) of unconsolidated subsidiaries	2,051	80	549	(2,680)	–
Net income (loss)	$ 2,191	$ 549	$ 2,230	$ (2,680)	$ 2,290
Net income (loss) attributed to:					
Non-controlling interests	$ –	$ –	$ 69	$ –	$ 69
Participating policyholders	–	–	31	(1)	30
Shareholders	2,191	549	2,130	(2,679)	2,191
	$ 2,191	$ 549	$ 2,230	$ (2,680)	$ 2,290

Consolidated Statement of Cash Flows

For the year ended December 31, 2016	MFC (Guarantor)	JHUSA (Issuer)	Other subsidiaries	Consolidation adjustments	Consolidated MFC
Operating activities					
Net income (loss)	$ 2,929	$ 572	$ 3,068	$ (3,436)	$ 3,133
Adjustments for non-cash items in net income (loss)					
Equity in net income of unconsolidated subsidiaries	(2,653)	(211)	(572)	3,436	–
Increase (decrease) in insurance contract liabilities	–	5,225	12,789	–	18,014
Increase (decrease) in investment contract liabilities	–	58	(58)	–	–
(Increase) decrease in reinsurance assets	–	(1,444)	602	–	(842)
Amortization of (premium) discount on invested assets	–	(5)	83	–	78
Other amortization	2	284	407	–	693
Net realized and unrealized (gains) losses and impairment on assets	(9)	(917)	(1,878)	–	(2,804)
Deferred income tax expense (recovery)	3	391	(629)	–	(235)
Stock option expense	–	(1)	20	–	19
Cash provided by operating activities before undernoted items	272	3,952	13,832	–	18,056
Dividends from unconsolidated subsidiary	1,950	111	–	(2,061)	–
Changes in policy related and operating receivables and payables	171	(1,290)	99	–	(1,020)
Cash provided by (used in) operating activities	2,393	2,773	13,931	(2,061)	17,036
Investing activities					
Purchases and mortgage advances	(32)	(34,656)	(69,371)	–	(104,059)
Disposals and repayments	–	32,343	49,658	–	82,001
Changes in investment broker net receivables and payables	–	(35)	(151)	–	(186)
Investment in common shares of subsidiaries	(5,706)	–	–	5,706	–
Net cash decrease from purchase of subsidiaries and businesses	–	–	(495)	–	(495)
Capital contribution to unconsolidated subsidiaries	–	(350)	–	350	–
Return of capital from unconsolidated subsidiaries	–	1	–	(1)	–
Notes receivables from affiliates	–	–	544	(544)	–
Notes receivable from parent	–	–	344	(344)	–
Notes receivable from subsidiaries	(6)	(40)	–	46	–
Cash provided by (used in) investing activities	(5,744)	(2,737)	(19,471)	5,213	(22,739)
Financing activities					
Increase (decrease) in repurchase agreements and securities sold but not yet purchased	–	–	(23)	–	(23)
Issue of long-term debt, net	3,899	–	–	–	3,899
Redemption of long-term debt	–	–	(158)	–	(158)
Issue of capital instruments, net	479	–	–	–	479
Redemption of capital instruments	–	–	(949)	–	(949)
Funds borrowed (repaid), net	–	(1)	(18)	–	(19)
Secured borrowings from securitization transactions	–	–	847	–	847
Changes in deposits from Bank clients, net	–	–	(157)	–	(157)
Shareholders' dividends paid in cash	(1,593)	–	–	–	(1,593)
Dividends paid to parent	–	–	(2,061)	2,061	–
Contributions from (distributions to) non-controlling interests, net	–	–	10	–	10
Common shares issued, net	66	–	5,706	(5,706)	66
Preferred shares issued, net	884	–	–	–	884
Capital contributions by parent	–	–	350	(350)	–
Return of capital to parent	–	–	(1)	1	–
Notes payable to affiliates	–	(544)	–	544	–
Notes payable to parent	–	–	46	(46)	–
Notes payable to subsidiaries	(344)	–	–	344	–
Cash provided by (used in) financing activities	3,391	(545)	3,592	(3,152)	3,286
Cash and short-term securities					
Increase (decrease) during the year	40	(509)	(1,948)	–	(2,417)
Effect of foreign exchange rate changes on cash and short-term securities	(1)	(149)	(197)	–	(347)
Balance, beginning of year	122	4,445	12,435	–	17,002
Balance, end of year	161	3,787	10,290	–	14,238
Cash and short-term securities					
Beginning of year					
Gross cash and short-term securities	122	4,938	12,825	–	17,885
Net payments in transit, included in other liabilities	–	(493)	(390)	–	(883)
Net cash and short-term securities, beginning of year	122	4,445	12,435	–	17,002
End of year					
Gross cash and short-term securities	161	4,317	10,673	–	15,151
Net payments in transit, included in other liabilities	–	(530)	(383)	–	(913)
Net cash and short-term securities, end of year	$ 161	$ 3,787	$ 10,290	$ –	$ 14,238
Supplemental disclosures on cash flow information:					
Interest received	$ –	$ 4,523	$ 5,966	$ 61	$ 10,550
Interest paid	210	144	1,397	(768)	983
Income taxes paid	35	68	738	–	841

Consolidated Statement of Cash Flows

For the year ended December 31, 2015	MFC (Guarantor)	JHUSA (Issuer)	Other subsidiaries	Consolidation adjustments	Consolidated MFC
Operating activities					
Net income (loss)	$ 2,191	$ 549	$ 2,230	$ (2,680)	$ 2,290
Adjustments for non-cash items in net income (loss)					
Equity in net income of unconsolidated subsidiaries	(2,051)	(80)	(549)	2,680	–
Increase (decrease) in insurance contract liabilities	–	(3,223)	10,675	–	7,452
Increase (decrease) in investment contract liabilities	–	59	144	–	203
(Increase) decrease in reinsurance assets, excluding the impact of Closed Block reinsurance transaction	–	830	561	–	1,391
Amortization of (premium) discount on invested assets	–	–	90	–	90
Other amortization	2	105	473	–	580
Net realized and unrealized (gains) losses and impairment on assets	(191)	606	3,072	–	3,487
Deferred income tax expense (recovery)	5	150	(498)	–	(343)
Stock option expense	–	–	16	–	16
Cash provided by operating activities before undernoted items	(44)	(1,004)	16,214	–	15,166
Dividends from unconsolidated subsidiary	4,000	398	291	(4,689)	–
Cash decrease due to Closed Block reinsurance transaction	–	(1,336)	(687)	–	(2,023)
Changes in policy related and operating receivables and payables	38	1,429	(4,236)	–	(2,769)
Cash provided by (used in) operating activities	3,994	(513)	11,582	(4,689)	10,374
Investing activities					
Purchases and mortgage advances	–	(31,061)	(46,080)	–	(77,141)
Disposals and repayments	179	29,893	36,870	–	66,942
Changes in investment broker net receivables and payables	–	31	71	–	102
Investment in common shares of subsidiaries	(2,392)	–	–	2,392	–
Net cash decrease from purchase of subsidiaries and businesses	–	–	(3,808)	–	(3,808)
Capital contribution to unconsolidated subsidiaries	–	(447)	–	447	–
Return of capital from unconsolidated subsidiaries	–	59	–	(59)	–
Notes receivable from parent	–	–	(31)	31	–
Notes receivable from subsidiaries	30	–	180	(210)	–
Cash provided by (used in) investing activities	(2,183)	(1,525)	(12,798)	2,601	(13,905)
Financing activities					
(Decrease) increase in repurchase agreements and securities sold but not yet purchased	–	–	(212)	–	(212)
Redemption of long-term debt	(2,243)	–	–	–	(2,243)
Issue of capital instruments, net	–	–	2,089	–	2,089
Redemption of capital instruments	(350)	–	–	–	(350)
Funds borrowed (repaid), net	–	(39)	(7)	–	(46)
Secured borrowings from securitization transactions	–	–	436	–	436
Changes in deposits from Bank clients, net	–	–	(351)	–	(351)
Shareholders' dividends paid in cash	(1,427)	–	–	–	(1,427)
(Distributions to) contributions from non-controlling interests, net	–	–	61	–	61
Common shares issued, net	37	–	2,392	(2,392)	37
Dividends paid to parent	–	(291)	(4,398)	4,689	–
Gain (loss) on intercompany transaction	–	18	(18)	–	–
Capital contributions by parent	–	–	447	(447)	–
Return of capital to parent	–	–	(59)	59	–
Notes payable to parent	–	(180)	(30)	210	–
Notes payable to subsidiaries	31	–	–	(31)	–
Cash provided by (used in) financing activities	(3,952)	(492)	350	2,088	(2,006)
Cash and short-term securities					
Increase (decrease) during the year	(2,141)	(2,530)	(866)	–	(5,537)
Effect of foreign exchange rate changes on cash and short-term securities	3	1,056	1,043	–	2,102
Balance, beginning of year	2,260	5,918	12,259	–	20,437
Balance, end of year	122	4,444	12,436	–	17,002
Cash and short-term securities					
Beginning of year					
Gross cash and short-term securities	2,260	6,311	12,508	–	21,079
Net payments in transit, included in other liabilities	–	(393)	(249)	–	(642)
Net cash and short-term securities, beginning of year	2,260	5,918	12,259	–	20,437
End of year					
Gross cash and short-term securities	122	4,938	12,825	–	17,885
Net payments in transit, included in other liabilities	–	(494)	(389)	–	(883)
Net cash and short-term securities, end of year	$ 122	$ 4,444	$ 12,436	$ –	$ 17,002
Supplemental disclosures on cash flow information:					
Interest received	$ 11	$ 4,512	$ 5,422	$ (20)	$ 9,925
Interest paid	212	131	1,135	(407)	1,071
Income taxes paid	–	20	767	–	787

Note 24 Comparatives

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

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Exhibit 99.2



Manulife Financial Corporation
Management's Discussion & Analysis

For the year ended December 31, 2016

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Caution Regarding Forward-Looking Statements

From time to time, Manulife Financial Corporation ("MFC") makes written and/or oral forward-looking statements, including in this document. In addition, our representatives may make forward-looking statements orally to analysts, investors, the media and others. All such statements are made pursuant to the "safe harbour" provisions of Canadian provincial securities laws and the U.S. Private Securities Litigation Reform Act of 1995.

The forward-looking statements in this document include, but are not limited to, statements with respect to core ROE expansion over the medium term and the drivers of such expansion, the contribution of recent major acquisitions and partnerships to annual core earnings over the medium term, the anticipated benefits and costs of the acquisition of Standard Life, and Manulife's expected capital position under the new LICAT guideline and also relate to, among other things, our objectives, goals, strategies, intentions, plans, beliefs, expectations and estimates, and can generally be identified by the use of words such as "may", "will", "could", "should", "would", "likely", "suspect", "outlook", "expect", "intend", "estimate", "anticipate", "believe", "plan", "forecast", "objective", "seek", "aim", "continue", "goal", "restore", "embark" and "endeavour" (or the negative thereof) and words and expressions of similar import, and include statements concerning possible or assumed future results. Although we believe that the expectations reflected in such forward-looking statements are reasonable, such statements involve risks and uncertainties, and undue reliance should not be placed on such statements and they should not be interpreted as confirming market or analysts' expectations in any way.

Certain material factors or assumptions are applied in making forward-looking statements and actual results may differ materially from those expressed or implied in such statements. Important factors that could cause actual results to differ materially from expectations include but are not limited to: general business and economic conditions (including but not limited to the performance, volatility and correlation of equity markets, interest rates, credit and swap spreads, currency rates, investment losses and defaults, market liquidity and creditworthiness of guarantors, reinsurers and counterparties); changes in laws and regulations; changes in accounting standards applicable in any of the territories in which we operate; changes in regulatory capital requirements; our ability to execute strategic plans and changes to strategic plans; downgrades in our financial strength or credit ratings; our ability to maintain our reputation; impairments of goodwill or intangible assets or the establishment of provisions against future tax assets; the accuracy of estimates relating to morbidity, mortality and policyholder behaviour; the accuracy of other estimates used in applying accounting policies, actuarial methods and embedded value methods; our ability to implement effective hedging strategies and unforeseen consequences arising from such strategies; our ability to source appropriate assets to back our long-dated liabilities; level of competition and consolidation; our ability to market and distribute products through current and future distribution channels, including through our collaboration arrangements with Standard Life plc, bancassurance partnership with DBS Bank Ltd and distribution agreement with Standard Chartered; unforeseen liabilities or asset impairments arising from acquisitions and dispositions of businesses, including with respect to the acquisitions of Standard Life, New York Life's Retirement Plan Services business and Standard Chartered's MPF and Occupational and Retirement Schemes Ordinance ("ORSO") businesses; the realization of losses arising from the sale of investments classified as available-for-sale; our liquidity, including the availability of financing to satisfy existing financial liabilities on expected maturity dates when required; obligations to pledge additional collateral; the availability of letters of credit to provide capital management flexibility; accuracy of information received from counterparties and the ability of counterparties to meet their obligations; the availability, affordability and adequacy of reinsurance; legal and regulatory proceedings, including tax audits, tax litigation or similar proceedings; our ability to adapt products and services to the changing market; our ability to attract and retain key executives, employees and agents; the appropriate use and interpretation of complex models or deficiencies in models used; political, legal, operational and other risks associated with our non-North American operations; acquisitions and our ability to complete acquisitions including the availability of equity and debt financing for this purpose; the failure to realize some or all of the expected benefits of the acquisitions of Standard Life, New York Life's Retirement Plan Services business and Standard Chartered's MPF and ORSO businesses; the disruption of or changes to key elements of the Company's or public infrastructure systems; environmental concerns; our ability to protect our intellectual property and exposure to claims of infringement; and our inability to withdraw cash from subsidiaries.

Additional information about material risk factors that could cause actual results to differ materially from expectations and about material factors or assumptions applied in making forward-looking statements may be found in this document under "Risk Management", "Risk Factors" and "Critical Accounting and Actuarial Policies" and in the "Risk Management" note to the consolidated financial statements as well as elsewhere in our filings with Canadian and U.S. securities regulators. The forward-looking statements in this document are, unless otherwise indicated, stated as of the date hereof and are presented for the purpose of assisting investors and others in understanding our financial position and results of operations, our future operations, as well as our objectives and strategic priorities, and may not be appropriate for other purposes. We do not undertake to update any forward-looking statements, except as required by law.

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Management's Discussion and Analysis

This Management's Discussion and Analysis ("MD&A") is current as of February 9, 2017.

Overview

Manulife Financial Corporation is a leading international financial services group that helps people achieve their dreams and aspirations by putting customers' needs first and providing the right advice and solutions. We operate as John Hancock in the United States and Manulife elsewhere. We provide financial advice, insurance, as well as wealth and asset management solutions for individuals, groups and institutions. At the end of 2016, we had approximately 35,000 employees, 70,000 agents, and thousands of distribution partners, serving more than 22 million customers. At the end of 2016, we had $977 billion (US$728 billion) in assets under management and administration, and in the previous 12 months we made almost $26 billion in payments to our customers. Our principal operations are in Asia, Canada and the United States where we have served customers for more than 100 years. With our global headquarters in Toronto, Canada, we trade as 'MFC' on the Toronto, New York, and the Philippine stock exchanges and under '945' in Hong Kong.

In this document, the terms "Company", "Manulife", "we" and "our" mean Manulife Financial Corporation ("MFC") and its subsidiaries. The term "MLI" means The Manufacturers Life Insurance Company and its subsidiaries.

Manulife's net income attributed to shareholders was $2.9 billion in 2016 compared with $2.2 billion in 2015. Net income attributed to shareholders is comprised of core earnings[1] (consisting of items we believe reflect the underlying earnings capacity of the business), which amounted to $4.0 billion in 2016 compared with $3.4 billion in 2015, and items excluded from core earnings of $1.1 billion of charges in 2016 compared with $1.2 billion of charges in 2015.

While the overall impact of higher interest rates is highly positive over the long term for our Company, net income attributed to shareholders was negatively impacted by market movements in the fourth quarter of 2016. For the full year, net income attributed to shareholders was $2.9 billion, an increase of 34% over the prior year. The increase in net income attributed to shareholders reflected growth in core earnings, and a turnaround in investment-related experience partially offset by an increase in charges related to the direct impact of markets.

Fully diluted earnings per common share was $1.41 in 2016, compared with $1.05 in 2015 and return on common shareholders' equity ("ROE") was 7.3% in 2016, compared with 5.8% for 2015. Fully diluted core earnings per common share[1] was $1.96 in 2016 compared with $1.68 in 2015 and core return on shareholders' equity ("core ROE")[1] was 10.1% in 2016 compared with 9.2% in 2015.

Manulife achieved particularly strong operating results in 2016, ending the year with $4.0 billion in core earnings, an increase of 17% over the prior year; and achieving the target we set back in 2012. The increase in core earnings was driven by core investment gains of $197 million (compared with nil in 2015), strong new business and in-force growth in Asia, and the release of tax and related provisions in the U.S. and Corporate and Other segments as a result of the closure of multiple tax years in the U.S., partially offset by higher equity hedging costs and higher interest expense due to recent debt issuances. The strengthening of the U.S. dollar and the Japanese Yen compared with the Canadian dollar also contributed $149 million to the increase in core earnings. Core earnings in 2016 included net policyholder experience charges of $162 million post-tax ($276 million pre-tax) compared with charges of $205 million post-tax ($362 million pre-tax) in 2015.

Core earnings excludes the direct impact of changes in equity markets and interest rates and changes in actuarial methods and assumptions as well as a number of other items that are considered material and that we do not believe reflect the underlying earnings capacity of the business. Items excluded from core earnings are:

For the years ended December 31, ($ millions)	**2016**	2015	2014
Investment-related experience outside of core earnings[(1)]	**$ –**	$ (530)	$ 359
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities [(2)]	**(484)**	(93)	412
Changes in actuarial methods and assumptions [(3)]	**(453)**	(451)	(198)
Integration and acquisition costs[(4)]	**(81)**	(149)	–
Other items[(5)]	**(74)**	(14)	40
Total	**$ (1,092)**	$ (1,237)	$ 613

(1) In 2016, we generated investment-related experience gains of $197 million which were included in core earnings in accordance with our definition of core earnings. The gains were driven by the favourable impact of fixed income reinvestment activities on the measurement of our policy liabilities and credit experience. While we reported lower returns on our alternative long-duration portfolio than expected in the valuation of our policy liabilities, we reported gains in the second half of the year that partially offset the charges reported in the first half of the year. The $530 million charge reported in 2015 included a charge of $876 million due to the sharp decline in oil and gas prices partially offset by a $346 million gain related to higher than expected returns on other asset classes as well as fixed income reinvestment activities. In accordance with our definition of core earnings, we included $197 million of investment-related experience gains in core earnings in 2016 and nil in 2015. (See "Performance and Non-GAAP Measures" below.)

(2) The direct impact of equity markets and interest rates is relative to our policy liability valuation assumptions and includes changes to interest rate assumptions, as well as experience gains and losses on derivatives associated with our macro equity hedges. We also include gains and losses on the sale of available-for-sale ("AFS") debt securities as management may have the ability to partially offset the direct impacts of changes in interest rates reported in the liability segments. Additional information related to the $484 million charge in 2016 is included in the "Analysis of Net Income" and the "Fourth Quarter Financial Highlights" below.

(3) As noted in the Critical Accounting and Actuarial Policies section below, a comprehensive review of actuarial methods and assumptions is performed annually. In 2016 we strengthened our reserves to update morbidity, mortality, lapse, future premium and tax cash flow assumptions on our LongTerm Care business and to proactively reduce our ultimate reinvestment rate assumptions ahead of an expected update by the Actuarial Standards Board in 2017, partially offset by reserve releases related to other updates including policyholder experience assumptions in our U.S. Variable Annuity business.

[1] This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

(4) The 2016 charge of $81 million included costs to integrate businesses acquired from Standard Life plc, NYL and Standard Chartered. The 2015 charge of $149 million included integration and acquisition costs of $99 million for the Standard Life transaction and $50 million for the NYL RPS acquisition and closed block reinsurance transaction ("Closed Block").
(5) The 2016 charge of $74 million primarily relates to restructuring and impairment charges related to the discontinuance of new sales of our stand-alone individual long-term care product in the U.S., restructuring costs related to our Indonesia operations and the closure of our technology shared service centre in Malaysia. These items were partially offset by a gain with respect to one of the Company's pension plans. In addition, a gain related to the release of tax-related contingencies was largely offset by an update to tax timing assumptions related to the valuation of policy liabilities was included. The 2015 charge of $14 million relates to the settlement cost from the buy-out of the U.K. pension plan and the recapture of a reinsurance treaty in Canada mostly offset by tax rate changes in Canada and Japan.

Insurance sales[1] were $4.0 billion in 2016, an increase of 11%[2] compared with 2015. In 2016, we achieved record Asia insurance sales, which increased 27% compared with 2015, driven by broad-based sales growth across the region and strong sales through the bank channel, including the successful launch of our partnership with DBS Bank Ltd. ("DBS"). Canadian insurance sales declined 16% as 2015 included two exceptionally large group benefits sales. U.S. insurance sales declined 6% as a result of an industry trend to guaranteed products which we have intentionally de-emphasized.

Wealth and Asset Management ("WAM") net flows[1] were $15.3 billion in 2016, compared with $34.4 billion in 2015. 2016 marked the 7th year of consecutive positive quarterly net flows in our WAM businesses. The continued positive net flows in 2016 were driven by strong inflows in our institutional advisory business, and mutual funds businesses in Asia and Canada. This was partially offset by outflows in our North American pension and U.S. mutual fund businesses. U.S. mutual fund outflows were impacted by a challenging sales environment and the underperformance of a few key funds earlier in the year. Net flows were $19.1 billion lower than in 2015, driven by outflows in U.S. mutual funds compared with strong prior year inflows and lower institutional sales.

WAM gross flows[1] were $120.5 billion in 2016, an increase of 3% compared with 2015. Gross flows in the U.S increased 5% to record levels, due to strong mid-market pension sales reflecting a full year of sales from the acquired New York Life business, partially offset by lower mutual fund sales. Gross flows in Canada increased 3%, driven by continued strong growth in mutual fund sales, partially offset by lower sales in the large case pension segment compared to our record year in 2015. In Asia, gross flows increased 26% driven by mutual fund sales, including money market, and new fund launches in mainland China. These were partially offset by lower institutional gross flows.

Other Wealth sales[1] were $8.2 billion in 2016, an increase of 3% compared with 2015. In 2016, Other Wealth sales in Asia increased 14%, driven by new product launches and increased sales in the bank channel, which more than offset an 11% decline in Canada due to changes to our higher risk segregated fund products earlier this year.[3]

Assets under management and administration[1] ("AUMA") were $977 billion as at December 31, 2016, an increase of 6% compared with December 31, 2015, driven by investment returns and continued positive customer inflows. Wealth and Asset Management AUMA increased 8% from December 31, 2015 to $544 billion, driven by similar reasons.

The Minimum Continuing Capital and Surplus Requirements ("MCCSR") ratio for The Manufacturers Life Insurance Company ("MLI") was 230% as at December 31, 2016, compared with 223% at the end of 2015. The increase in the MCCSR ratio is primarily due to net capital issuances and net income, partially offset by an increase in required capital and the funding of MFC shareholder dividends.

MFC's financial leverage ratio was 29.5% at December 31, 2016 compared with 23.8% at the end of 2015. The increase is primarily related to net funding issuances in 2016 of $4.3 billion which addressed higher regulatory capital requirements through issuances in several markets as we execute on our global funding diversification strategy.

The operating divisions delivered $1.8 billion in **remittances**[4] to the Group in 2016, compared with $2.2 billion in 2015. Robust remittances from our Canadian and U.S. subsidiaries were offset by net injections in Asian entities, as capital was needed largely to address the impact of lower interest rates on local capital requirements.

Strategic Direction

Our strategy is aligned with our Corporate Purpose – to help people achieve their dreams and aspirations, by putting customers' needs first and providing the right advice and solutions. Delivery of our strategy will provide exceptional experiences for our customers and sustainable, long-term growth for our shareholders. We have three key themes to our strategy:

- Developing more holistic and long-lasting customer relationships;
- Continuing to build and integrate our global wealth and asset management businesses; and
- Leveraging skills and experiences across our international operations.

We continue to see significant opportunities inside our Asia and global Wealth and Asset Management businesses. In Asia, new business value has grown at a rapid pace, helped by the exclusive partnerships we have signed with other financial institutions in the region. In addition, our Wealth and Asset Management businesses are strongly positioned to grow with sizeable scale, thanks to strong organic growth and a number of acquisitions.

1 This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
2 Growth (declines) in sales, gross flows, premiums and deposits and assets under management and administration are stated on a constant currency basis. Constant currency basis is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
3 The U.S. Division does not have any products for sale in this category.
4 Remittances are defined as the cash remitted or payable to the Group from operating subsidiaries and excess capital generated by stand-alone Canadian operations.

Technology is transforming our customers' lives and our industry and successfully investing in innovation is critical to our success. We use a shareholder value lens to view the investments we make and continue to focus on expense management initiatives to help fund investments. We have invested across the Company to re-engineer our business and dramatically improve the customer experience. Highlights include:

- Across Canada, the U.S. and parts of Asia, our life insurance offerings now include wearable devices to help our customers live healthier lives and save money;
- In Canada, we are using advanced, predictive analytics to simplify insurance underwriting and eliminate unnecessary medical testing;
- In the U.S., we have launched the first phase of our new digital buying platform and made our first foray into digital advice; and
- In mainland China, we are using the WeChat messaging platform to process claims, reducing processing time from more than one week to as little as one day.

Core ROE was 10.1% in 2016 and we expect core ROE to expand toward 13% or more over the medium term as we execute on our strategy and investment-related experience normalizes.[1] We expect the primary driver of core ROE expansion to be organic growth of our less capital intensive/higher ROE businesses, particularly our Asia and Wealth and Asset Management businesses, augmented by contributions from recent major acquisitions and by long-term strategic partnerships in Asia.

Financial Performance

As at and for the years ended December 31, ($ millions, unless otherwise stated)	**2016**	2015	2014
Net income attributed to shareholders	**$ 2,929**	$ 2,191	$ 3,501
Preferred share dividends	**(133)**	(116)	(126)
Common shareholders' net income	**$ 2,796**	$ 2,075	$ 3,375
Reconciliation of core earnings to net income attributed to shareholders:			
Core earnings[(1)]	**$ 4,021**	$ 3,428	$ 2,888
Investment-related experience outside of core earnings	**–**	(530)	359
Core earnings and investment-related experience outside of core earnings	**$ 4,021**	$ 2,898	$ 3,247
Other items to reconcile core earnings to net income attributed to shareholders:			
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	**(484)**	(93)	412
Changes in actuarial methods and assumptions	**(453)**	(451)	(198)
Integration and acquisition costs	**(81)**	(149)	–
Other items	**(74)**	(14)	40
Net income attributed to shareholders	**$ 2,929**	$ 2,191	$ 3,501
Basic earnings per common share ($)	**$ 1.42**	$ 1.06	$ 1.82
Diluted earnings per common share ($)	**$ 1.41**	$ 1.05	$ 1.80
Diluted core earnings per common share ($)[(1)]	**$ 1.96**	$ 1.68	$ 1.48
Return on common shareholders' equity ("ROE") (%)	**7.3%**	5.8%	11.9%
Core ROE (%)[(1)]	**10.1%**	9.2%	9.8%
Sales[(1)]			
Insurance products	**$ 3,952**	$ 3,380	$ 2,544
Wealth and Asset Management gross flows[(1)]	**$ 120,450**	$ 114,686	$ 69,164
Wealth and Asset Management net flows[(1)]	**$ 15,265**	$ 34,387	$ 18,335
Other Wealth products	**$ 8,159**	$ 7,494	$ 3,866
Premiums and deposits[(1)]			
Insurance products	**$ 33,594**	$ 29,509	$ 24,938
Wealth and Asset Management products	**$ 120,450**	$ 114,686	$ 69,164
Other Wealth products	**$ 6,034**	$ 6,718	$ 3,752
Corporate and Other	**$ 88**	$ 90	$ 77
Assets under management and administration ($ billions)[(1)]	**$ 977**	$ 935	$ 691
Capital ($ billions)[(1)]	**$ 50.2**	$ 49.9	$ 39.6
MLI's MCCSR ratio	**230%**	223%	248%

[(1)] This item is a non-GAAP measure. For a discussion of our use of non-GAAP measures, see "Performance and Non-GAAP Measures" below.

Analysis of Net Income

Manulife's full year 2016 net income attributed to shareholders was $2.9 billion compared with $2.2 billion for full year 2015. Net income attributed to shareholders is comprised of core earnings (consisting of items we believe reflect the underlying earnings capacity of the business), which amounted to $4.0 billion in 2016 compared with $3.4 billion in 2015, and items excluded from core earnings, which amounted to a net charge of $1.1 billion in 2016 compared with a net charge of $1.2 billion in 2015. The increase in net income attributed to shareholders reflected strong growth in core earnings, and a turnaround in investment-related experience partially offset by an increase in charges related to the direct impact of markets.

The increase in core earnings was driven by core investment gains of $197 million (compared with nil in 2015), strong new business and in-force growth in Asia, and the release of tax and related provisions in the U.S. and Corporate and Other segments as a result of the closure of multiple tax years in the U.S., partially offset by higher equity hedging costs and higher interest expense due to recent

[1] See "Caution regarding forward-looking statements" above.

debt issuances. The strengthening of the U.S. dollar and the Japanese Yen compared with the Canadian dollar also contributed $149 million to the increase in core earnings. Core earnings in 2016 included net policyholder experience charges of $162 million post-tax ($276 million pre-tax) compared with net charges of $205 million post-tax ($362 million pre-tax) in 2015.

We evaluate our divisions operating performance based on core earnings.

- Asia core earnings was $1,495 million in 2016 compared with $1,234 million in 2015. This represented a 15% increase after adjusting for costs arising from the expansion of our dynamic hedging program (there is a corresponding decrease in macro hedging costs in the Corporate and Other segment) and the impact of changes in foreign currency rates. The increase in core earnings was driven by solid growth from in-force business and continued strong growth in new business volumes, partially offset by less favourable policyholder experience and the impact of declining interest rates.
- Canada core earnings was $1,384 million compared with $1,252 million in 2015. The 11% increase was primarily due to improved policy holder experience, and higher fee income on the Company's wealth and asset management business due to higher asset levels.
- U.S. core earnings was $1,615 million compared with $1,466 million in 2015. This represented a 6% increase after adjusting for the impact of currency rates. The increase in core earnings was driven by a US$52 million release of tax provision as a result of closing certain tax years and the improved policyholder experience in the second half of 2016 as a result of changes to long-term care assumptions (see below in "2016 Review of Actuarial Methods and Assumptions"). In addition, lower amortization of deferred acquisition costs on in-force variable annuity business were offset by the impact of lower insurance sales and lower fee income in WAM businesses due to fee compression in our pension business and changes in business mix.
- Corporate and Other core loss excluding the expected cost of macro hedges and core investment gains was $409 million in 2016 compared with $298 million in 2015. The unfavourable variance of $111 million was due to higher interest expense on debt issuances and lower realized gains on available-for-sale equities, higher interest allocated to the divisions, and higher expenses in Corporate and Other and strategic investments in our Manulife Asset Management business, partially offset by the release of provisions and interest on uncertain tax positions in the U.S.
- The expected cost of macro hedges was $261 million in 2016 compared with $226 million in 2015, an increase of $35 million. The charges were higher in the first half of 2016, and reduced in the second half related to actions to reduce equity risk.
- Investment-related experience in core earnings in 2016 of $197 million reflected the favourable impact of fixed income reinvestment activities on the measurement of our policy liabilities and credit experience. While we reported lower returns on our alternative long-duration portfolio than expected in the valuation of our policy liabilities, we reported gains in the second half of 2016 that partially offset the charges reported in the first half of the year. Total investment-related experience in 2015 was a loss and therefore, in accordance with our definition of core earnings, we did not report any investment-related experience in core earnings in 2015. (See section "Performance and Non-GAAP Measures" below)

Items excluded from core earnings amounted to net charges of $1.1 billion in 2016 and to $1.2 billion in 2015. Additional information is included in the footnotes to the table in the "Overview" section above. Further information with respect to the direct impact of equity markets and interest rates is described below as well as in the "Fourth Quarter Financial Highlights" below.

For the years ended December 31, ($ millions)	**2016**	2015	2014
Investment-related experience outside of core earnings	**$ –**	$ (530)	$ 359
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	**(484)**	(93)	412
Changes in actuarial methods and assumptions	**(453)**	(451)	(198)
Integration and acquisition costs	**(81)**	(149)	–
Other items	**(74)**	(14)	40
Total	**$ (1,092)**	$ (1,237)	$ 613

The net gain (loss) related to the direct impact of equity markets and interest rates and variable annuity guarantee liabilities in the table above is attributable to:

For the years ended December 31, ($ millions)	**2016[1]**	2015	2014
Direct impact of equity markets and variable annuity guarantee liabilities [2]	**$ (364)**	$ (299)	$ (182)
Fixed income reinvestment rates assumed in the valuation of policy liabilities [3]	**(335)**	201	729
Sale of AFS bonds and derivative positions in the Corporate and Other segment	**370**	5	(40)
Risk reduction items[4]	**(155)**	–	**–**
Other	**–**	–	(95)
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	**$ (484)**	$ (93)	$ 412

(1) See "Fourth Quarter Financial Highlights" below for additional information with respect to 2016 net charges.
(2) In 2016, the net charge of $364 million included charges of $205 million from gross equity exposure, $120 million from macro hedge experience and $39 million from dynamic hedging experience. As at December 31, 2016, the net notional value of shorted equity futures contracts in our macro hedge program was $1.5 billion (2015 – $5.6 billion).
(3) The $335 million charge in 2016 for fixed income reinvestment assumptions was largely driven by the decrease in corporate spreads which resulted in a decline in the reinvestment yields on future fixed income purchases assumed in the measurement of policy liabilities and a charge to net income attributed to shareholders. This was partially offset by falling swap spreads at the 30-year point, the point in the curve where we have a large number of our interest rate hedges. The fall in swap rates resulted in an increase in the fair value of our swaps and a gain to net income attributed to shareholders. The $201 million gain 2015 was due to a decrease in swap spreads partially offset by a decrease in risk-free rates.

(4) The risk reduction actions in 2016 included selling equity investments supporting our products with guarantee features and increasing the amount of interest rate hedges. The sale of equity investments resulted in a decrease in our underlying earnings sensitivity before hedging and also reduced the amount of hedging instruments used in the macro hedging program.

The table below reconciles 2016, 2015 and 2014 net income attributed to shareholders to core earnings.

For the years ended December 31, ($ millions)	2016	2015	2014
Core earnings[1]			
Asia Division	**$ 1,495**	$ 1,234	$ 1,008
Canadian Division	**1,384**	1,252	927
U.S. Division	**1,615**	1,466	1,383
Corporate and Other (excluding expected cost of macro hedges and core investment gains)	**(409)**	(298)	(446)
Expected cost of macro hedges[2]	**(261)**	(226)	(184)
Investment-related experience in core earnings[3]	**197**	–	200
Total core earnings	**4,021**	3,428	2,888
Investment-related experience outside of core earnings[3]	**–**	(530)	359
Core earnings and investment-related experience outside of core earnings	**4,021**	2,898	3,247
Changes in actuarial methods and assumptions[4]	**(453)**	(451)	(198)
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities[3],[5] (see table below)	**(484)**	(93)	412
Integration and acquisition costs[6]	**(81)**	(149)	–
Other items[7]	**(74)**	(14)	40
Net income attributed to shareholders	**$ 2,929**	$ 2,191	$ 3,501

(1) This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

(2) The 2016 net charge from macro equity hedges was $381 million and consisted of a $261 million charge related to the estimated expected cost of the macro equity hedges relative to our long-term valuation assumptions and a charge of $120 million because actual markets outperformed our valuation assumptions (included in the direct impact of equity markets and interest rates and variable annuity guarantee liabilities above).

(3) As outlined under "Critical Accounting and Actuarial Policies" below, net insurance contract liabilities under International Financial Reporting Standards ("IFRS") for Canadian insurers are determined using the Canadian Asset Liability Method ("CALM"). Under CALM, the measurement of policy liabilities includes estimates regarding future expected investment income on assets supporting the policies. Experience gains and losses are reported when current period activity differs from what was assumed in the policy liabilities at the beginning of the period. These gains and losses can relate to both the investment returns earned in the period, as well as to the change in our policy liabilities driven by the impact of current period investing activities on future expected investment income assumptions. Our definition of core earnings in 2016 and 2015 (see "Performance and Non-GAAP Measures") includes up to $400 million (2014 – up to $200 million) of favourable investment-related experience reported in a single year.

(4) See "Critical Accounting and Actuarial Assumptions – Review of Actuarial Methods and Assumptions" below.

(5) The direct impact of equity markets and interest rates is relative to our policy liability valuation assumptions and includes changes to interest rate assumptions, as well as experience gains and losses on derivatives associated with our macro equity hedges. We also include gains and losses on the sale of available-for-sale ("AFS") debt securities as management may have the ability to partially offset the direct impacts of changes in interest rates reported in the liability segments. See table above for components of this item. Additional information related to the $484 million charge in 2016 is included in the "Fourth Quarter Financial Highlights" below.

(6) The 2016 charge of $81 million included costs to integrate businesses acquired from Standard Life plc, NYL and Standard Chartered. The 2015 charge of $149 million included integration and acquisition costs of $99 million and $50 million for the Standard Life transaction and NYL RPS acquisition and closed block reinsurance transaction ("Closed Block"), respectively.

(7) The 2016 charge of $74 million primarily relates to restructuring and impairment charges related to the discontinuance of new sales of our stand-alone individual long-term care product in the U.S., restructuring costs related to our Indonesia operations and the closure of our technology shared service centre in Malaysia. These items were partially offset by a gain with respect to one of the Company's pension plans. In addition, a gain related to the release of tax-related contingencies was largely offset by an update to tax timing assumptions related to the valuation of policy liabilities was included.

Earnings per Common Share and Return on Common Shareholders' Equity

Fully diluted earnings per common share for 2016 was $1.41, compared with $1.05 in 2015. Return on common shareholders' equity for 2016 was 7.3%, compared with 5.8% for 2015.

Revenue

Revenues include (i) premiums received on life and health insurance policies and fixed annuity products, net of premiums ceded to reinsurers; (ii) investment income comprised of income earned on general fund assets, credit experience and realized gains and losses on assets held in the Corporate segment; (iii) fee and other income received for services provided; and (iv) realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on our macro hedging program. Premium equivalents from administrative services only ("ASO"), as well as deposits received by the Company on investment contracts such as segregated funds, mutual funds and managed funds are not included in revenue; however, the Company does receive fee income from these products, which is included in revenue. Fees generated from deposits and ASO premium and deposit equivalents are an important part of our business and as a result, revenue does not fully represent sales and other activity taking place during the respective periods. The premiums and deposits metric below includes these factors.

For 2016, revenue before realized and unrealized losses and premiums ceded under the Closed Block reinsurance transaction was $52.2 billion compared with $45.5 billion in 2015. The increase was driven by business growth as well as the impact of foreign exchange rates.

In 2016, the net realized and unrealized gains on assets supporting insurance and investment contract liabilities and on the macro hedging program were $1.1 billion, primarily driven by gains from the general decrease in U.S. interest rates and higher equity markets, partially offset by net losses on derivatives, including the macro equity hedging program, primarily related to the losses on interest rate swaps and treasury locks. In 2015, the net realized and unrealized losses on assets supporting insurance and investment

contract liabilities and on the macro hedging program were $3.1 billion, primarily driven by the rise in North American swap rates and interest rates, and partially offset by real estate revaluation gains, primarily in the U.S.

See “Impact of Fair Value Accounting” below.

Revenue

For the years ended December 31, ($ millions)	2016	2015	2014
Gross premiums	$ 36,659	$ 32,020	$ 25,156
Premiums ceded to reinsurers[1]	(9,027)	(8,095)	(7,343)
Net premiums excluding the impact of the Closed Block reinsurance transaction[1]	27,632	23,925	17,813
Investment income	13,390	11,465	10,744
Other revenue	11,181	10,098	8,739
Total revenue before items noted below	52,203	45,488	37,296
Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on macro hedging program	1,134	(3,062)	17,092
Premiums ceded, net of ceded commissions and additional consideration relating to Closed Block reinsurance transaction[1]	–	(7,996)	–
Total revenue	$ 53,337	$ 34,430	$ 54,388

[1] For the purpose of comparable period-over-period reporting, we exclude the $7,996 million impact of the Closed Block reinsurance transaction, which is shown separately from premiums ceded to reinsurers, for the full year 2015. The net reinsurance premium was fully offset by an increase in the change in reinsurance assets in the Consolidated Statements of Income. For other periods, amounts in this subtotal equal the “net premiums” in the Consolidated Statements of Income.

Premiums and Deposits

Premiums and deposits[1] is an additional measure of our top line growth, as it includes all customer cash inflows. Premiums and deposits for insurance products were $33.6 billion in 2016, up 10% compared with 2015 on a constant currency basis and excluding the impact of the Closed Block reinsurance transaction.

Premiums and deposits for Wealth and Asset Management products were $120.5 billion in 2016, an increase of $5.8 billion, or 3% on a constant currency basis over 2015. Premiums and deposits for Other Wealth products were $6.0 billion in 2016, a decrease of $0.7 billion, or 13% on a constant currency basis, from 2015.

Assets under Management and Administration (“AUMA”)

AUMA[1] as at December 31, 2016 were a record for Manulife of $977 billion, an increase of $42 billion, or 6% on a constant currency basis, compared with December 31, 2015, driven by investment returns and continued positive customer inflows. The Wealth and Asset Management portion of AUMA as at December 31, 2016 was $544 billion, an increase of $34 billion, or 8% on a constant currency basis, compared with December 31, 2015, driven by similar reasons.

Assets under Management and Administration

As at December 31, ($ millions)	2016	2015	2014
General fund	$ 321,869	$ 307,506	$ 267,801
Segregated funds net assets[1]	315,177	313,249	256,532
Mutual funds, institutional advisory accounts and other[1],[2]	257,576	236,512	165,287
Total assets under management	894,622	857,267	689,620
Other assets under administration	82,433	77,909	1,509
Total assets under management and administration	$ 977,055	$ 935,176	$ 691,129

[1] Segregated fund assets, mutual fund assets and other funds are not available to satisfy the liabilities of the Company’s general fund.
[2] Other funds represent pension funds, pooled funds, endowment funds and other institutional funds managed by the Company on behalf of others.

Capital

Total capital[1] was $50.2 billion as at December 31, 2016 compared with $49.9 billion as at December 31, 2015, an increase of $0.3 billion. The increase from December 31, 2015 was primarily driven by net income attributed to shareholders net of dividends paid of $1.4 billion and net capital issuances of $0.4 billion (does not include the $3.9 billion of senior debt issued net of maturities as it is not in the definition of regulatory capital), partially offset by the unfavourable impact of foreign exchange rates of $1.0 billion and the unfavourable change in unrealized losses on AFS securities of $0.7 billion.

Impact of Fair Value Accounting

Fair value accounting policies affect the measurement of both our assets and our liabilities. The difference between the reported amounts of our assets and liabilities determined as of the balance sheet date and the immediately preceding balance sheet date in accordance with the applicable mark-to-market accounting principles is reported as investment-related experience and the direct impact of equity markets and interest rates and variable annuity guarantees, each of which impacts net income (see “Analysis of Net Income” above).

[1] This item is a non-GAAP measure. See “Performance and Non-GAAP Measures” below.

We reported $1.1 billion of net realized and unrealized gains in investment income in 2016 (2015 – losses of $3.1 billion).

As outlined under "Critical Accounting and Actuarial Policies" below, net insurance contract liabilities under IFRS are determined using CALM, as required by the Canadian Institute of Actuaries ("CIA"). The measurement of policy liabilities includes the estimated value of future policyholder benefits and settlement obligations to be paid over the term remaining on in-force policies, including the costs of servicing the policies, reduced by the future expected policy revenues and future expected investment income on assets supporting the policies. Investment returns are projected using the current asset portfolios and projected reinvestment strategies. Experience gains and losses are reported when current period activity differs from what was assumed in the policy liabilities at the beginning of the period. We classify gains and losses by assumption type. For example, current period investing activities that increase (decrease) the future expected investment income on assets supporting the policies will result in an investment-related experience gain (loss).

Public Equity Risk and Interest Rate Risk

At December 31, 2016, the impact of a 10% decline in equity markets was estimated to be a charge of $640 million and the impact of a 50 basis point decline in interest rates, across all durations and markets, on our earnings was estimated to be a charge of less than $100 million. See "Risk Management" and "Risk Factors" below.

Impact of Foreign Exchange Rates

We have worldwide operations, including in Canada, the United States and various countries in Asia, and generate revenues and incur expenses in local currencies in these jurisdictions, all of which are translated into Canadian dollars. The bulk of our exposure to foreign exchange rates is to movements in the U.S. dollar.

Items impacting our Consolidated Statements of Income are translated to Canadian dollars using average exchange rates for the respective period. For items impacting our Consolidated Statements of Financial Position, period end rates are used for currency translation purpose. The following table provides the most relevant foreign exchange rates for 2016 and 2015.

	Quarterly					Full Year	
Exchange rate	**4Q16**	3Q16	2Q16	1Q16	4Q15	**2016**	2015
Average[1]							
U.S. dollar	**1.3343**	1.3050	1.2889	1.3724	1.3360	**1.3252**	1.2786
Japanese yen	**0.0122**	0.0128	0.0119	0.0119	0.0110	**0.0122**	0.0106
Hong Kong dollar	**0.1720**	0.1682	0.1661	0.1765	0.1724	**0.1707**	0.1649
Period end							
U.S. dollar	**1.3426**	1.3116	1.3009	1.2970	1.3841	**1.3426**	1.3841
Japanese yen	**0.0115**	0.0130	0.0127	0.0115	0.0115	**0.0115**	0.0115
Hong Kong dollar	**0.1732**	0.1691	0.1677	0.1672	0.1786	**0.1732**	0.1786

(1) Average rates for the quarter are from Bank of Canada which are applied against Consolidated Statements of Income items for each period. Average rate for the full year is a 4 point average of the quarterly average rates.

In general, our net income attributed to shareholders and core earnings benefit from a weakening Canadian dollar and are adversely affected by a strengthening Canadian dollar. Net income attributed to shareholders and core earnings from the Company's foreign operations are translated to Canadian dollars. However, in a period of losses, the weakening of the Canadian dollar has the effect of increasing the losses. The relative impact of foreign exchange in any given period is driven by the movement of currency rates as well as the proportion of earnings generated in our foreign operations.

Changes in foreign exchange rates, primarily due to the strengthening of the U.S. dollar compared with the Canadian dollar, increased core earnings by $149 million in 2016 compared with 2015. The impact of foreign currency on items excluded from core earnings does not provide relevant information given the nature of these items.

Fourth Quarter Financial Highlights

For the quarters ended December 31, ($ millions, except per share amounts)	**2016**	2015	2014
Net income attributed to shareholders	**$ 63**	$ 246	$ 640
Core earnings[1],[2] (see next page for reconciliation)	**$ 1,287**	$ 859	$ 713
Diluted earnings per common share ($)	**$ 0.01**	$ 0.11	$ 0.33
Diluted core earnings per common share ($)[2]	**$ 0.63**	$ 0.42	$ 0.36
Return on common shareholders' equity (annualized)	**0.3%**	2.3%	8.1%
Sales[2]			
Insurance products	**$ 1,074**	$ 1,027	$ 760
Wealth and Asset Management gross flows[2]	**$ 38,160**	$ 31,089	$ 17,885
Wealth and Asset Management net flows[2]	**$ 6,073**	$ 8,748	$ 2,806
Other Wealth products	**$ 1,737**	$ 2,109	$ 1,109
Premiums and deposits[2]			
Insurance products	**$ 8,639**	$ 7,759	$ 6,631
Wealth and Asset Management products	**$ 38,160**	$ 31,089	$ 17,885
Other Wealth products	**$ 1,405**	$ 1,963	$ 962
Corporate and Other	**$ 23**	$ 26	$ 18

(1) Impact of currency movement on the fourth quarter of 2016 ("4Q16") core earnings compared with the fourth quarter of 2015 ("4Q15") was a $10 million favourable variance.
(2) This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

Manulife's 4Q16 net income attributed to shareholders was $63 million compared with $246 million in 4Q15. Net income attributed to shareholders is comprised of core earnings (consisting of items we believe reflect the underlying earnings capacity of the business), which amounted to $1,287 million in 4Q16 compared with $859 million in 4Q15, and items excluded from core earnings, which netted to charges of $1,224 million in 4Q16 compared with charges of $613 million in 4Q15 for a period-over-period decrease of $611 million.

The $428 million increase in core earnings included $180 million in core investment gains (compared with nil in 4Q15). The remaining $248 million increase was driven by in-force and new business growth in Asia, a reduction in the expected costs of macro hedges and a $142 million release of tax and related provisions in the U.S. and Corporate and Other segments as a result of the closure of multiple tax years in the U.S. Core earnings in 4Q16 included net policyholder experience charges of $43 million post-tax ($65 million pre-tax) compared with $50 million post-tax ($97 million pre-tax) in 2015.

The charges for items excluded from core earnings in 4Q16 primarily related to the direct impact of equity markets and interest rates and variable annuity guarantee liabilities of $1,202 million which more than offset gains of $718 million that we reported in the first three quarters of 2016, resulting in a full year charge of $484 million. The components of the charges for 2016 and 4Q16 are outlined in the table below, while the footnotes to the table provide additional information on each of these components:

For the year and quarter ended December 31, ($ millions)	**2016**	**4Q16**
Direct impact of interest rates on fixed income reinvestment rates assumed in the valuation of policy liabilities related to:		
changes in risk-free rates [1]	**$ (53)**	**$ (330)**
decrease in corporate spreads [2]	**(553)**	**(275)**
decrease (increase) in swap spreads [3]	**271**	**(242)**
	(335)	**(847)**
Gains (charges) on sale of AFS bonds and derivative positions in the Corporate and Other segment [4]	**370**	**(142)**
Direct impact of equity markets and variable annuity guarantee liabilities [5]	**(364)**	**(213)**
Risk reduction items [6]	**(155)**	**–**
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	**$ (484)**	**$ (1,202)**

(1) The impact of changes in risk-free rates for full year 2016 was largely driven by a fall in Japanese interest rates. The charges in 4Q16 largely came from North America where interest rates rose and the yield curve steepened, reversing the movements seen in the first three quarters of 2016. The impact of the yield curve steepening resulted in an accounting mismatch between our insurance liabilities and our interest rate hedges. This occurred because our policy liabilities are valued with reference to actuarial interest rate models, whereas our interest rate hedges are valued at current market rates. This accounting mismatch can be material when there is a significant change in the shape of the interest rate curve as was the case in 4Q16.

(2) The decrease in corporate spreads in 4Q16 and the full year of 2016 resulted in a decline in the reinvestment yields on future fixed income purchases assumed in the measurement of policy liabilities and a charge to net income attributed to shareholders.

(3) Swap spreads at the 30-year point, the point on the curve where we have a large number of our interest rate hedges, rose in 4Q16 and fell for the full year of 2016. The 4Q16 rise in swap spreads resulted in a decrease in the fair value of our swaps and a charge to net income attributed to shareholders. The full year fall in swap spreads resulted in an increase in the fair value of our swaps and a gain to net income attributed to shareholders.

(4) Gains (charges) on sale of AFS bonds and derivative positions in the Corporate and Other segment was a result of realizing gains (charges) at the time of sale. As at December 31, 2016, the AFS fixed income assets held in the surplus segment were in a net after-tax unrealized loss position of $683 million.

(5) The direct impact of equity markets was primarily driven by losses in the dynamic hedging program due to basis risk losses in fund manager and hedge asset performance which was exacerbated by the large change in interest rates during the fourth quarter.

(6) Risk reduction activities: In 3Q16, we reported a charge of $155 million related to actions to reduce our exposure to equity markets and interest rates. The risk reduction actions in 2016 included selling equity investments supporting our products with guarantee features and increasing the amount of interest rate hedges. The sale of equity investments resulted in a decrease in our underlying earnings sensitivity before hedging and also reduced the amount of hedging instruments used in the macro hedging program.

The charges for items excluded from core earnings in 4Q15 included a $361 million charge for investment-related experience, primarily due to the impact of sharply lower oil and gas prices on our investment portfolio, along with a number of smaller items totaling $252 million.

We evaluate our divisions operating performance based on core earnings.

- In Asia, core earnings in 4Q16 was $388 million compared with $334 million in 4Q15. This was a 16% increase compared with 4Q15 after adjusting for costs arising from the expansion of our dynamic hedging program (there is a corresponding decrease in macro hedging costs in the Corporate and Other segment) and the impact of changes in foreign currency rates. The growth in core earnings was driven by solid growth of in-force business and continued strong growth in new business volumes, partially offset by less favourable policyholder experience and the impact of declining interest rates.
- In Canada, core earnings was $359 million in 4Q16 compared with $352 million in 4Q15, an increase of $7 million.
- In the U.S, core earnings was $471 million in 4Q16 and $332 million in 4Q15. The $139 million increase in core earnings over the prior year includes a US$52 million release of tax provisions as a result of closing certain tax years, improved policyholder experience in 4Q16 as a result of changes to long-term care assumptions in 3Q16 and lower amortization of deferred acquisition costs on in-force variable annuity business partially offset by lower fee income in WAM businesses driven by fee compression in our pension business and changes in business mix.
- Corporate and Other core loss excluding expected cost of macro hedges and core investment gains was $75 million in 4Q16 compared with $85 million in 4Q15. The $10 million favourable variance in core earnings reflected a $73 million release of provisions and interest on uncertain tax positions in the U.S. partially offset by higher expenses in Corporate and Other and strategic investments in our Manulife Asset Management business.

Analysis of Net Income

The table below reconciles net income attributed to shareholders to core earnings for the periods presented.

For the quarters ended December 31, ($ millions)	4Q16	4Q15
Core earnings[1]		
Asia Division	**$ 388**	$ 334
Canadian Division	**359**	352
U.S. Division	**471**	332
Corporate and Other (excluding expected cost of macro hedges and core investment gains)	**(75)**	(85)
Expected cost of macro hedges[2]	**(36)**	(74)
Investment-related experience in core earnings[3]	**180**	–
Core earnings	**1,287**	859
Investment-related experience outside of core earnings[3]	**–**	(361)
Core earnings and investment-related experience outside of core earnings	**1,287**	498
Other items to reconcile core earnings to net income attributed to shareholders:		
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities (see table below) [3],[4]	**(1,202)**	(29)
Changes in actuarial methods and assumptions	**(10)**	(97)
Integration and acquisition costs[5]	**(25)**	(39)
Other items excluded from core earnings[6]	**13**	(87)
Net income attributed to shareholders	**$ 63**	$ 246

(1) This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
(2) The 4Q16 net charge from macro equity hedges was $110 million and consisted of a $36 million charge related to the estimated expected cost of the macro equity hedges relative to our long-term valuation assumptions and a charge of $74 million because actual markets outperformed our valuation assumptions (included in direct impact of equity markets and interest rates and variable annuity guarantee liabilities below).
(3) As outlined under "Critical Accounting and Actuarial Policies" below, net insurance contract liabilities under IFRS for Canadian insurers are determined using CALM. Under CALM, the measurement of policy liabilities includes estimates regarding future expected investment income on assets supporting the policies. Experience gains and losses are reported when current period activity differs from what was assumed in the policy liabilities at the beginning of the period. These gains and losses can relate to both the investment returns earned in the period, as well as to the change in our policy liabilities driven by the impact of current period investing activities on future expected investment income assumptions. The direct impact of equity markets and interest rates is separately reported. Our definition of core earnings (see "Performance and Non-GAAP Measures") includes up to $400 million of favourable investment-related experience reported in a single year.
(4) The direct impact of equity markets and interest rates is relative to our policy liability valuation assumptions and includes changes to interest rate assumptions, including experience gains and losses on derivatives associated with our macro equity hedges. We also include gains and losses on derivative positions and the sale of AFS bonds in the Corporate and Other segment. See table below for components of this item.
(5) The 4Q16 charge of $25 million included costs to integrate businesses acquired from Standard Life, New York Life and Standard Chartered.
(6) The 4Q16 gain of $13 million included a gain with respect to one of the Company's pension plans, partially offset by charges related to restructuring and impairment charges related to the discontinuance of new sales of our stand-alone individual long-term care product in the U.S. and restructuring costs related to our Indonesia operations and the closure of our technology shared service centre in Malaysia.

The gain (charge) related to the direct impact of equity markets and interest rates and variable annuity guarantee liabilities in the table above is attributable to:

For the quarters ended December 31, ($ millions)	4Q16	4Q15
Direct impact of equity markets and variable annuity guarantee liabilities [1]	**$ (213)**	$ 77
Fixed income reinvestment rates assumed in the valuation of policy liabilities [2]	**(847)**	(97)
Sale of AFS bonds and derivative positions in the Corporate and Other segment	**(142)**	(9)
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	**$ (1,202)**	$ (29)

(1) In 4Q16, charges of $2,366 million from dynamic hedging experience and $74 million from macro hedge experience were partially offset by gains of $2,227 million from gross equity exposure, which resulted in charge of $213 million.
(2) The loss in 4Q16 for fixed income reinvestment assumptions was driven by interest rate movements in North America, where interest rates rose and the yield curve steepened, decreases in corporate spreads and increases in swap spreads at the 30-year point.

Sales

Insurance sales were $1.1 billion in 4Q16, an increase of 3% compared with 4Q15. In 4Q16, Asia insurance sales increased 18%, driven by strong double digit growth in Asia Other and strong contributions from the bancassurance partnership with DBS. This increase was partially offset by the impact of earlier pricing actions in Japan in response to lower interest rates. Canadian insurance sales declined by 22% as group benefits sales in 4Q15 included an exceptionally large sale. U.S. insurance sales declined 6% due to an industry trend towards products with guarantee features which we have de-emphasized.

Wealth and Asset Management net flows were $6.1 billion in 4Q16, a decrease of $2.7 billion compared with 4Q15. 4Q16 marked the 28 th consecutive quarter of positive net flows in our WAM businesses. Positive net flows were driven by strong inflows in our institutional advisory business, as well as in our Asia and Canadian mutual fund businesses, partially offset by outflows in our North American pension businesses and U.S. mutual funds. The less favourable net flows compared with 4Q15 is a result of outflows in the U.S. which more than offset higher inflows in our institutional advisory business.

Other Wealth sales were $1.7 billion in 4Q16, a decrease of 22% compared with 4Q15. In 4Q16, Other Wealth sales in Asia decreased by 26% reflecting strong sales in 4Q15 from successful new product launches as well as a slowing of sales momentum in 4Q16. In Canada, sales declined due to product actions to de-emphasize our higher risk segregated fund products.

Update on Efficiency and Effectiveness Initiative

Our Efficiency and Effectiveness ("E&E") initiative, announced November 2012, is aimed at leveraging our global scale and capabilities to achieve operational excellence and cost efficiencies throughout the organization. The annual net pre-tax savings from the 4-year program of our E&E initiative reached over $500 million in 2016, exceeding our target of $400 million. These savings have enabled us to fund other new initiatives such as those outlined in the "Strategic Direction" section above. Efforts are continuing to identify and execute on additional opportunities to make our operations more efficient and effective and to fund new investments.

Update on 2016 Targets for Core Earnings and Core ROE

In 2012, we stated that we were targeting $4 billion in core earnings and core ROE of 13% in 2016. We reported $4 billion in core earnings and core ROE of 10.1% in 2016. As disclosed above, we expect core ROE to expand toward 13% or more over the medium term.[1]

Update on Acquisitions and Distribution Agreements

On January 30, 2015, the Company completed its acquisition of 100% of the shares of Standard Life Financial Inc. and of Standard Life Investments Inc., collectively the Canadian-based operations of Standard Life plc ("Standard Life"). The acquisition contributes to our growth strategy, particularly in wealth and asset management. The purchase consideration of $4 billion was paid in cash. We recognized $1,477 million of tangible net assets, $1,010 million of intangible assets, and $1,513 million of goodwill. At time of acquisition we stated that we expected to achieve $100 million of annual after-tax cost savings largely by the 3rd year[2] and that we expected total integration costs over the first three years would be $150 million post-tax[2]. We expect to achieve the cost savings target and although we anticipate integration costs to be higher than the original estimate, it will be offset by higher revenue synergies. We continue to remain on track to achieve the original earnings targets.[2] As stated in our 2015 MD&A, as a result of merging of the businesses it will not be possible to segregate the earnings contribution from Standard Life and therefore not possible to report on EPS accretion; however, we expect to achieve these original targets[2] (accretive by approximately $0.03 to earnings per common share ("EPS") in 2016, 2017 and 2018[2]) and have built them into our plans.

On April 14, 2015, the Company completed its acquisition of New York Life's ("NYL") Retirement Plan Services ("RPS") business. The acquisition of the NYL RPS business supports Manulife's global growth strategy for wealth and asset management businesses. The purchase consideration of $787 million included conventional financial consideration of $398 million plus $389 million of net impact of the assumption by NYL of our in-force participating life insurance closed block ("Closed Block") through net 60% reinsurance agreements, effective July 1, 2015. We recognized $128 million of intangible assets and $659 million of goodwill.

Effective January 1, 2016, the Company entered into a 15-year regional distribution agreement with DBS covering Singapore, Hong Kong, mainland China and Indonesia. The arrangement significantly expands our distribution capability in Asia. We recognized $536 million of distribution network intangible assets on the agreement's effective date.

On November 1, 2016, the Company completed its acquisition of Standard Chartered's Mandatory Provident Fund ("MPF") and Occupational Retirement Schemes Ordinance ("ORSO") businesses in Hong Kong, and the related investment management entity. In addition, on November 1, 2016, we commenced our 15-year exclusive MPF distribution partnership with Standard Chartered. Total consideration of $392 million was paid in cash. These arrangements significantly expand Manulife's retirement business in Hong Kong.

[1] See "Caution regarding forward-looking statements" and "Strategic Direction" above.
[2] See "Caution regarding forward-looking statements" above.

Performance by Division

Asia Division

We are a leading provider of financial protection and wealth and asset management products in most of Asia's largest and fastest-growing economies, with operations in Japan, Hong Kong, Macau, mainland China, Taiwan, Indonesia, Singapore, the Philippines, Vietnam, Malaysia, Thailand and Cambodia. We are focused on helping our customers to achieve their dreams and aspirations, and that focus drives our growth strategy and underpins our commitment to the region.

We offer a broad portfolio of products and services including life and health insurance, annuities, mutual funds and retirement solutions that cater to the wealth and protection needs of individuals and corporate customers through a multi-channel distribution network, supported by a team of approximately 11,000 employees. Our distribution network includes more than 69,000 contracted agents, 100 bank partnerships and 1,000 independent agents, financial advisors and brokers selling our products. The bank partnerships include a regional partnership with DBS, which together with 5 other exclusive partnerships give us access to more than 18 million bank customers.

In 2016, Asia Division contributed 24% of the Company's total premiums and deposits and, as at December 31, 2016, accounted for 12% of the Company's assets under management and administration.

Financial Performance

Asia Division reported net income attributed to shareholders of $1,141 million in 2016 compared with $1,105 million in 2015. Net income attributed to shareholders is comprised of core earnings, which was $1,495 million in 2016 compared with $1,234 million in 2015, and items excluded from core earnings, which amounted to a net charge of $354 million for 2016 compared with a net charge of $129 million in 2015.

Expressed in U.S. dollars, the presentation currency of the division, net income attributed to shareholders was US$863 million compared with US$865 million in 2015, core earnings was US$1,129 million in 2016 compared with US$963 million in 2015 and items excluded from core earnings amounted to a net charge of US$266 million in 2016 compared with a net charge of US$98 million in 2015.

Core earnings increased 15%, compared with 2015 after adjusting for costs arising from the expansion of our dynamic hedging program (there is a corresponding decrease in macro hedging costs in the Corporate and Other segment) and the impact of changes in foreign currency rates. The increase in core earnings was driven by solid growth from in-force business, and continued strong growth in new business volumes, partially offset by less favourable policyholder experience and the impact of declining interest rates.

The change in items excluded from core earnings primarily related to the direct impact of equity markets and the changes in interest rates in 2016 and to the direct impact of the decline in equity markets in 2015.

The table below reconciles net income attributed to shareholders to core earnings for the Asia Division for 2016, 2015 and 2014.

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Core earnings[1]	**$ 1,495**	$ 1,234	$ 1,008	**$ 1,129**	$ 963	$ 913
Items to reconcile core earnings to net income attributed to shareholders:						
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities [2]	**(433)**	(174)	173	**(326)**	(134)	157
Investment-related experience related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes and credit experience	**91**	25	62	**69**	20	56
Other[3]	**(12)**	20	4	**(9)**	16	3
Net income attributed to shareholders[1]	**$ 1,141**	$ 1,105	$ 1,247	**$ 863**	$ 865	$ 1,129

(1) Core earnings is a non-GAAP measure. See "Performance and Non-GAAP Measures" below. The 2015 earnings on assets backing capital allocated to each operating segment have been restated to align with the methodology used in 2016.

(2) The direct impact of equity markets and interest rates is relative to our policy liability valuation assumptions and includes changes to interest rate assumptions. The net charge of $433 million in 2016 (2015 – net charge of $174 million) consisted of a $24 million charge (2015 – $32 million charge) related to variable annuities that are not dynamically hedged, an $80 million charge (2015 – $89 million charge) on general fund equity investments supporting policy liabilities and on fee income, a $259 million charge (2015 – $1 million charge) related to fixed income reinvestment rates assumed in the valuation of policy liabilities and a $70 million charge (2015 – $52 million charge) related to variable annuity guarantee liabilities that are dynamically hedged. The amount of variable annuity guaranteed value that was dynamically hedged at the end of 2016 was 67% (2015 – 53%). Our variable annuity guarantee dynamic hedging strategy is not designed to completely offset the sensitivity of policy liabilities to all risks associated with the guarantees embedded in these products.

(3) Other in 2016 includes the integration costs in relation to the acquisition of Standard Chartered's MPF and Occupational and Retirement Schemes Ordinance businesses in Hong Kong, which completed on November 1, 2016 and restructuring costs in Indonesia, partly offset by the impact of tax rate change on the deferred tax liabilities in Japan. Other in 2015 includes the impact of tax rate change on the deferred tax liabilities.

Sales *(all percentages quoted are on a constant currency basis)*

Insurance sales in 2016 were US$2.0 billion, an increase of 27% compared with 2015, driven by double digit sales growth in most of the territories in which we operate. Sales in Japan of US$632 million were 11% lower than prior year, impacted by the pricing actions in response to the lower interest rate environment. Hong Kong sales of US$465 million increased 23% from 2015, reflecting the expansion of our bancassurance and broker channels. Asia Other (excludes Japan and Hong Kong) sales of US$905 million increased 89%, included record high sales in all territories except for Thailand, and reflected the activation of our exclusive partnership with DBS that commenced in 2016.

Other Wealth sales in 2016 were US$3.7 billion, an increase of 14% compared with 2015. Other Wealth sales growth was mainly driven by Japan and Hong Kong reflecting the success of new product launches and sales from DBS.

Annualized premium equivalent ("APE")[1] sales in 2016 were a record for Asia Division of US$2,498 million, an increase of 29%. We achieved double digit growth in all territories except for Japan and Thailand. APE sales included insurance sales of US$2,002 million and other wealth APE sales of US$496 million, up 27% and 38%, respectively. Japan APE sales in 2016 were US$1,019 million, an increase of 2%. Strong sales of other wealth products through both bank and independent broker channels were mostly offset by the impact of pricing actions on insurance products in response to the lower interest rate environment. Hong Kong APE sales in 2016 were US$496 million, an increase of 27%, driven by distribution expansion across all core channels (bancassurance, broker and agency). Asia Other (excludes Japan and Hong Kong) APE sales in 2016 were US$983 million, an increase of 84%. This was driven by record sales in all territories we operate in, except Thailand.

Wealth and Asset Management ("WAM") gross flows in 2016 were US$14.9 billion, an increase of 26% and WAM net flows in 2016 were US$3.9 billion, an increase of US$2.1 billion. Mutual fund sales in mainland China was the most significant driver for the growth in both gross and net flows. Japan WAM gross flows in 2016 were US$271 million, a decrease of 34% as equity market volatility impacted consumer confidence, resulting in weaker mutual fund sales. Hong Kong WAM gross flows in 2016 were US$2.6 billion, a slight increase over last year. The continued success and growth of our pension business was largely offset by lower mutual fund sales due to negative market sentiment. Asia Other (excludes Japan and Hong Kong) WAM gross flows in 2016 were US$12.0 billion, an increase of 36%. The growth was driven by mainland China, primarily from money market flows and the launch of new funds as well as pension sales in Indonesia and the launch of the first U.S. property REIT in Singapore.

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Insurance sales	**$ 2,651**	$ 1,930	$ 1,412	**$ 2,002**	$ 1,507	$ 1,278
Other wealth sales	**4,940**	3,885	1,818	**3,726**	3,022	1,644
Annualized premium equivalent ("APE") sales	**3,305**	2,354	1,599	**2,498**	1,836	1,447
Wealth and asset management gross flows	**19,679**	15,495	9,014	**14,875**	12,240	8,149

Revenue

Total revenue in 2016 of US$14.5 billion increased US$3.6 billion compared with 2015, primarily driven by the strong growth of new business premiums that augmented the stable growth of in-force business. Revenue before net realized and unrealized investment gains and losses increased by US$3.1 billion driven by the same reasons as total revenue.

Revenue

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Net premium income	**$ 15,585**	$ 11,495	$ 7,275	**$ 11,757**	$ 8,953	$ 6,583
Investment income	**1,853**	1,519	1,271	**1,400**	1,188	1,150
Other revenue	**1,566**	1,434	1,334	**1,185**	1,121	1,208
Revenue before net realized and unrealized investment gains and losses	**19,004**	14,448	9,880	**14,342**	11,262	8,941
Net realized and unrealized investment gains and losses	**290**	(446)	2,078	**204**	(365)	1,867
Total revenue	**$ 19,294**	$ 14,002	$ 11,958	**$ 14,546**	$ 10,897	$ 10,808

Premium and Deposits *(all percentages quoted are on a constant currency basis)*

Premium and deposits for 2016 were US$28.3 billion, an increase of 25% compared with 2015. Premiums and deposits for insurance products in 2016 were US$9.8 billion, an increase of 28% compared with 2015, driven by strong sales growth and robust recurring premium growth from in-force business. Wealth and Asset Management premiums and deposits in 2016 were US$14.9 billion, an increase of 26%, compared with 2015, reflecting new fund launches, notably in mainland China, the successful launch of the first U.S. property REIT in Singapore and the growth of our pension business and mutual fund sales in Indonesia. Other Wealth premiums and deposits in 2016 were US$3.7 billion and were 13% higher than 2015 driven by the success of new product launches coupled with expanding distribution reach.

[1] Annualized premium equivalent ("APE") sales is a metric commonly used in Asia and is comprised of Insurance sales plus 100% of regular premiums/ deposits and 10% of single premiums/ deposits for other wealth products. APE is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

Premiums and Deposits

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Insurance products	**$ 12,947**	$ 9,431	$ 7,066	**$ 9,771**	$ 7,356	$ 6,395
Wealth and asset management products	**19,681**	15,494	9,015	**14,875**	12,241	8,149
Other wealth products	**4,883**	3,875	1,816	**3,683**	3,015	1,641
Total premiums and deposits	**$ 37,511**	$ 28,800	$ 17,897	**$ 28,329**	$ 22,612	$ 16,185

Assets under Management

Asia Division assets under management were US$90.2 billion as at December 31, 2016, an increase of 17% on a constant currency basis compared with December 31, 2015, driven by net customer inflows of US$12.4 billion, higher investment income during 2016 and the addition of assets from the acquisition of Standard Chartered's MPF and ORSO businesses in Hong Kong.

Assets under Management

As at December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
General fund	**$ 63,332**	$ 54,206	$ 41,991	**$ 47,159**	$ 39,162	$ 36,198
Segregated funds	**24,644**	24,384	22,925	**18,341**	17,612	19,761
Mutual and other funds	**33,236**	27,848	22,167	**24,755**	20,121	19,108
Total assets under management	**$ 121,212**	$ 106,438	$ 87,083	**$ 90,255**	$ 76,895	$ 75,067

Strategic Direction

Manulife's Asia strategy focuses on providing Asia's growing mass affluent and affluent customer base with a premium and differentiated value proposition by integrating life, wealth and health solutions. Our strategy aligns with the key underlying customer trends and growth opportunities in Asia and draws upon our core strengths. We are well positioned to serve our customers through the delivery of our clearly articulated strategic agenda, including unsurpassed customer experience, holistic and integrated wealth management solutions, premium agency force, optimized bancassurance and market-leading digital customer engagement.

In 2016, we identified and commenced the roll-out of a number of key initiatives in Asia and continued to diversify our distribution channels, introduce new products and enhance our technology capabilities to build holistic and long-lasting customer relationships.

Manulife's partnership with DBS launched successfully on January 1, 2016 in Singapore, Hong Kong, Indonesia and mainland China. This partnership has accelerated Manulife's Asia growth strategy and added scale for our business. We now have a more balanced distribution mix and have advanced our capabilities in technology, operations, underwriting and digital innovation. The partnership has enhanced our ability to attract both new partners and the highest quality talent to join Manulife in Asia.

Following the successful launch in Hong Kong of our award-winning [1] ManulifeMOVE, a wellness initiative that rewards customers for living active lifestyles, we extended the roll-out to the Philippines and mainland China. In the Philippines, 70%[2] of enrollees are new to Manulife. In mainland China, the ManulifeMOVE launch was a high profile event with the participation of the Prime Minister of Canada, Justin Trudeau, as part of his first ever official visit to the country.

As part of our strategy to provide an unsurpassed customer experience, we introduced eClaims services in mainland China, Vietnam and Indonesia. In mainland China, the eClaims service was launched through WeChat, enabling customers to submit their claims via the popular messaging app, reducing the submission process from more than 1 week to 1 day.

In Japan, in 2016, we added a number of new bank partners to our existing bank network to further enhance our distribution reach. We also piloted our agency transformation program, which helps to enable our agents to build long lasting customer relationships as trusted advisors and deliver holistic product offerings. Building on 2015's advertising campaign featuring the Mazinger Z robot, we launched a sequel with a focus on raising awareness of the Manulife brand and our retirement solutions.

In Hong Kong, we also commenced our 15-year exclusive Mandatory Provident Fund ("MPF") distribution partnership with Standard Chartered Bank and completed the related acquisition of its existing pension businesses. This, combined with continued organic growth, strengthened our market position and in the fourth quarter Manulife became the largest MPF scheme sponsor measured by both assets under management and net cash flows[3]. To support our advisors and facilitate holistic sales processes we also launched our digital financial planning and electronic point of sales technology which facilitates end-to-end paperless transactions.

[1] "Best Integrated Social Campaign" at the 2016 Silver Bowl Awards from the global Life Insurance and Market Research Association (LIMRA).
[2] As at 3Q16.
[3] The Gadbury Group MPF Market Shares Report as of December 2016.

In Singapore, in 2016, with the launch of our exclusive bancassurance partnership with DBS, which augmented growth in other channels, we achieved 21% market share[1], and became the #1 life insurer in bancassurance based on annualized premium equivalent sales [1]. Our and DBS's joint focus on customer experience has been underpinned by streamlined new business processes, platform enhancements and integration of digital tools. We also launched the first pure-play U.S. office REIT listing in Singapore, which has strengthened our brand and banking distribution partnerships.

In Indonesia, in 2016, we introduced the country's first fully online end-to-end mutual fund transactions solution to deliver a market-leading customer engagement experience.

In Cambodia, in 2016, we have continued to extend our distribution reach with the signing of bancassurance agreements with ABA Bank and Foreign Trade Bank of Cambodia. With the addition of these agreements, Manulife has activated five bancassurance partnerships in the country since we began operations in 2012.

As noted in the "Capital Management Framework" section below, we also accessed the Asian capital markets for the first time, including debt issuances in Singapore and Taiwan.

[1] As at 3Q16. Source: Life Insurance Association Singapore.

Canadian Division

Serving one in three adult Canadians, we are a leading financial services organization in Canada. We offer a diverse range of protection, estate planning, investment and banking solutions through a diversified multi-channel distribution network, meeting the needs of a broad marketplace, supported by a team of more than 10,000 employees.

In our Insurance business, we offer broad-based insurance solutions to middle- and upper-income individuals, families, and business owners through a combination of competitive products, professional advice and quality customer service. Products include universal life, term life, whole life and living benefits products. We also provide group life, health and disability insurance solutions to Canadian employers; more than 21,000 Canadian businesses and organizations entrust their employee benefit programs to Manulife's Group Benefits. Life, health and specialty products, such as travel insurance, are also offered through alternative distribution channels, including sponsor groups and associations, as well as direct-to-customer marketing.

Our Wealth business offers a range of investment products and services to customers that span the investor spectrum, from those just starting to build their financial portfolio to individuals and families with complex retirement and estate planning needs. We provide personalized investment management, private banking and estate solutions to affluent clients. Manulife Bank offers flexible debt and cash flow management solutions as part of a customer's financial plan. We also provide Group Retirement solutions to more than 9,000 Canadian employers, through defined contribution plans, deferred profit sharing plans, non-registered savings plans and employee share ownership plans.

In 2016, Canadian Division contributed 19% of the Company's total premiums and deposits and, as at December 31, 2016, accounted for 24% of the Company's assets under management and administration.

Financial Performance

Canadian Division's net income attributed to shareholders was $1,486 million in 2016 compared with $480 million in 2015. Net income attributed to shareholders is comprised of core earnings, which was $1,384 million for 2016 compared with $1,252 million for 2015, and items excluded from core earnings, which amounted to a net gain of $102 million for 2016 compared with a net charge of $772 million in 2015.

The $132 million increase in core earnings over the prior year is primarily due to improved policy holder experience, and higher fee income on the Company's wealth and asset management business from higher asset levels. The year-over-year increase of $874 million in items excluded from core earnings was primarily driven by the improved impact of market-related factors including interest rates and equity markets, as well as higher oil and gas prices.

The table below reconciles net income attributed to shareholders to core earnings for the Canadian Division for 2016, 2015 and 2014.

For the years ended December 31, ($ millions)	**2016**	2015	2014
Core earnings[1]	**$ 1,384**	$ 1,252	$ 927
Items to reconcile core earnings to net income attributed to shareholders:			
Investment-related experience related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes and credit experience	**(114)**	(391)	1
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities [2]	**270**	(283)	51
Impact of a recapture of a reinsurance treaty and in-force product changes [3]	**–**	(40)	24
Net impact of acquisitions and divestitures	**(54)**	(59)	–
Tax items	**–**	1	–
Net income attributed to shareholders	**$ 1,486**	$ 480	$ 1,003

[1] Core earnings is a non-GAAP measure. See "Performance and Non-GAAP Measures" below. The 2015 earnings on assets backing capital allocated to each operating segment have been restated to align with the methodology used in 2016.

[2] The direct impact of equity markets and interest rates is relative to our policy liability valuation assumptions and includes changes to interest rate assumptions. The gain of $270 million in 2016 (2015 – $283 million charge) consisted of a $97 million gain (2015 – $81 million charge) on general fund equity investments supporting policy liabilities, a $277 million gain (2015 – $148 million charge) related to fixed income reinvestment rates assumed in the valuation of policy liabilities, nil (2015 –$1 million gain) related to unhedged variable annuities and a $104 million charge (2015 – $55 million charge) related to variable annuity guarantee liabilities that are dynamically hedged. The amount of variable annuity guaranteed value that was dynamically hedged at the end of 2016 was 85% (2015 – 88%). Our variable annuity guarantee dynamic hedging strategy is not designed to completely offset the sensitivity of policy liabilities to all risks associated with the guarantees embedded in these products.

[3] The $40 million charge in 2015 relates to the recapture of reinsurance treaties.

Sales

Insurance sales were $693 million in 2016, 16% lower than 2015 levels. Retail Insurance sales in 2016 of $235 million increased by 30% compared with 2015 driven by higher universal life sales in anticipation of regulatory changes. Institutional Markets sales for the full year 2016 of $458 million decreased 29% compared with 2015 primarily due to fewer sales at the large end of the group benefits market. Market activity was down in 2016 whereas there were two very large sales in 2015. We also experienced lower sales at the small end of the market due to pricing actions we took to address deteriorating claims experience.

Wealth and Asset Management gross flows in 2016 were $17.0 billion, an increase of $0.5 billion or 3% compared with 2015 reflecting continued strong growth in mutual funds. We reported net flows in 2016 of $3.8 billion, down from $5.5 billion in 2015 due to lower group retirement gross flows and increased mutual fund and group retirement redemptions. Assets under management for our WAM businesses at December 31, 2016 were $110 billion, an increase of 9% compared with December 31, 2015, driven by

positive net flows and investment returns over the past year in our mutual fund and Group Retirement Solutions ("GRS") businesses. Mutual Funds' full year gross flows of $9.8 billion in 2016 increased $1.1 billion or 13% compared with 2015, driven by successful sales campaigns and positive fund performance. GRS gross flows of $7.2 billion in 2016 decreased 8% or $0.6 billion compared with 2015 due to lower sales in the large case segment compared with our record year in 2015.

Other Wealth sales were $3.2 billion in 2016, a decrease of $0.4 billion or 11% over 2015, driven by changes in our higher risk segregated fund products earlier this year. As a result of these changes, segregated fund product[1] sales in 2016 were $2.5 billion, a decrease of 15% compared with 2015. Fixed product sales in 2016 were $716 million, an increase of 10% compared with 2015, primarily due to higher structured settlement sales.

Manulife Bank net lending assets were $19.5 billion as at December 31, 2016, in line with December 31, 2015, as growth continued to be challenged by competitive pressures in the residential mortgage market.

Sales

For the years ended December 31, ($ millions)	2016	2015	2014
Retail markets	**$ 235**	$ 181	$ 167
Institutional markets	**458**	644	411
Insurance products	**$ 693**	$ 825	$ 578
Wealth and asset management gross flows	**$ 17,023**	$ 16,474	$ 10,477
Other wealth products	**3,219**	3,609	2,048

Revenue

Revenue of $12.7 billion in 2016 increased $2.6 billion from $10.1 billion in 2015. Revenue before net realized and unrealized gains and losses of $12.4 billion in 2016 increased $1.6 billion from $10.8 billion in 2015 due to higher premium income. Other income was $3.5 billion, up $0.4 billion from $3.1 billion in 2015, reflecting higher reinsurance treaty revenue.

Revenue

As at December 31, ($ millions)	2016	2015	2014
Net premium income	**$ 4,972**	$ 4,430	$ 3,728
Investment income	**3,938**	3,247	3,298
Other revenue	**3,480**	3,124	2,611
Revenue before net realized and unrealized gains (losses)	**12,390**	10,801	9,637
Net realized and unrealized gains (losses) [(1)]	**317**	(736)	4,136
Total revenue	**$ 12,707**	$ 10,065	$ 13,773

[(1)] See "Financial Performance – Impact of Fair Value Accounting" above.

Premiums and Deposits

Premiums and deposits of $30.0 billion in 2016 were 2% higher than the 2015 level of $29.3 billion, reflecting strong mutual fund deposits and Retail Insurance sales. Insurance products' premiums and deposits in 2016 were $12.4 billion, or 7%, above the prior year due to higher Retail Insurance sales and Group Benefits single premium deposits. Premiums and deposits for wealth and asset management businesses and other wealth products were $17.0 billion and $3.2 billion, respectively, compared with $16.5 billion and $3.6 billion, respectively, in 2015.

Premiums and Deposits

For the years ended December 31, ($ millions)	2016	2015	2014
Insurance products	**$ 12,380**	$ 11,551	$ 10,508
Wealth and asset management products	**17,023**	16,474	10,477
Other wealth products	**3,219**	3,609	2,052
Less: mutual funds held by segregated funds	**(2,626)**	(2,290)	(1,418)
Total premiums and deposits	**$ 29,996**	$ 29,344	$ 21,619

[1] Segregated fund products include guarantees. These products are also referred to as variable annuities.

Assets under Management

Assets under management of $234.8 billion as at December 31, 2016 grew by $15.6 billion or 7% from $219.2 billion at December 31, 2015, driven by strong growth in wealth and asset management businesses.

Assets under Management

As at December 31, ($ millions)	2016	2015	2014
General fund	**$ 110,343**	$ 103,496	$ 85,070
Segregated funds	**97,220**	92,447	57,028
Mutual and other funds	**50,177**	44,884	33,411
Less: mutual funds held by segregated funds	**(22,983)**	(21,587)	(16,605)
Total assets under management	**$ 234,757**	$ 219,240	$ 158,904

Strategic Direction

Manulife Canada is focused on building holistic and long-lasting customer relationships to meet customer needs by offering comprehensive solutions. We do this by expanding and integrating our wealth, insurance and banking solutions and by leveraging the strength of our group business franchise and the breadth of our product portfolio in order to meet consumers' needs. Through data-driven marketing and predictive analytics, we will further enhance our understanding of customers' needs to deliver an optimized customer experience.

Shifting demographics, increasing use of technology and growing trends toward wellness programs are redefining the Canadian financial services landscape. We continue to focus on improving customer experience by increasingly engaging customers on digital platforms and simplifying processes.

In 2016, we launched a number of customer-focused initiatives:

- Manulife Vitality, an innovative approach to life insurance, encourages and supports our customers to live healthy lives. Garmin and Goodlife Fitness have partnered with us to deliver this rewards-based program;
- Initiatives to modernize insurance, such as being the first insurance company to offer insurance to Canadians with human immunodeficiency virus (HIV); reducing the number of medical tests required for Term policy applications, and significantly reducing the proportion of applicants tested for nicotine;
- Financial Wellness Assessment, an interactive online experience to help group retirement plan members ensure their finances are ready today and for the future;
- Retirement Redefined supports future retirees in planning for a long and healthy retirement by providing an engaging, interactive digital solution and resources to plan for their insurance and savings needs;
- Our Customer 360 View program was introduced to Manulife Bank, Manulife Securities and Manulife Private Wealth businesses to enhance the single view of our customers, allowing us to provide more holistic service to our customers based on their needs;
- Manulife Group Benefits DrugWatch™ program was integrated with our Specialty Drug Care and Prior Authorization programs to better manage higher cost specialty drugs and to help plan sponsors offer them to members at a lower cost;
- Manulife Ideal Signature Select, a new segregated fund solution, addresses client needs for asset accumulation and preservation through diversification and capital and estate protection;
- Manulife Securities' Advisor Managed Program, a structured investment money management platform available to approved advisors with Manulife Securities, where all investments can be held in the same account and there is no need for the client to sign off on trades, so there is significant time savings for clients and advisors; and
- Manulife Bank's Touch ID (finger print authentication) and Interac Flash ® access cards allow bank customers easy and convenient access to information and their money.

Our purpose is to help people achieve their dreams and aspirations, by putting the customers' needs first and providing the right advice and solutions. To accomplish this, we continue to develop customer focused initiatives that allow us to deliver on building holistic and long-lasting customer relationships to meet customer needs.

U.S. Division

Operating under the John Hancock brand in the U.S., our product suite includes wealth management and insurance products and is distributed primarily through affiliated and non-affiliated licensed financial advisors. We have a team of approximately 6,700 employees and our affiliated broker/dealer, Signator Investors, Inc., is comprised of a national network of independent firms with close to 2,200 registered representatives.

John Hancock Wealth Management offers a broad range of products and services focused on individuals and business markets, as well as institutional oriented products. John Hancock Investments ("JH Investments") offers a variety of mutual funds, Undertakings for Collective Investment in Transferrable Securities ("UCITS"), exchange traded funds ("ETF"), and 529 College Savings plans. John Hancock Retirement Plan Services ("JH RPS") provides employer sponsored retirement plans for companies ranging from start-ups to some of the largest corporations in America as well as servicing personal retirement accounts for former client employees. We also manage an in-force block of fixed deferred, variable deferred, and payout annuity products.

John Hancock Insurance ("JH Insurance") offers a broad portfolio of insurance products, including universal, variable, whole, and term life insurance designed to provide estate, business, income protection and retirement solutions for high net worth and emerging affluent markets. We also manage an in-force block of long-term care insurance which is designed to cover the cost of long-term services and support, including personal and custodial care in a variety of settings such as the home, a community organization, or other facility in the event of an illness, accident, or through the normal effects of aging. Effective December 2, 2016, we discontinued new sales of our stand-alone retail individual long-term care product.

In 2016, U.S. Division contributed 46% of the Company's total premiums and deposits and, as at December 31, 2016, accounted for 56% of the Company's assets under management and administration.

Financial Performance

U.S. Division reported net income attributed to shareholders of $1,134 million in 2016 compared with $1,460 million in 2015. Net income attributed to shareholders is comprised of core earnings, which was $1,615 million in 2016 compared with $1,466 million in 2015, and items excluded from core earnings, which amounted to a net charge of $481 million in 2016 compared with a net charge of $6 million in 2015. The strengthening of the U.S. dollar compared with the Canadian dollar accounted for $52 million of the increase in full year core earnings.

Expressed in U.S. dollars, the functional currency of the division, 2016 net income attributed to shareholders was US$865 million compared with US$1,138 million in 2015, core earnings was US$1,218 million compared with US$1,149 million in 2015, and items excluded from core earnings were a net charge of US$353 million compared with a net charge of US$11 million in 2015.

Core earnings increased by US$69 million or 6% compared with 2015, primarily driven by a US$52 million release of tax provisions as a result of closing certain tax years and the improved policyholder experience in the second half of 2016 as a result of changes to long-term care assumptions (see below in "2016 Review of Actuarial Methods and Assumptions"). In addition, lower amortization of deferred acquisition costs on in-force variable annuity business were partially offset by the impact of lower insurance sales and lower fee income in WAM businesses from fee compression in our pension business and changes in business mix. The unfavourable variance of US$342 million in items excluded from core earnings related to investment-related experience losses compared with gains in 2015 as well as the write-off of a distribution network intangible asset in JH LTC.

The table below reconciles net income attributed to shareholders to core earnings for the U.S. Division for 2016, 2015 and 2014.

For the years ended December 31,	Canadian $			US $		
($ millions)	**2016**	2015	2014	**2016**	2015	2014
Core earnings[1]	**$ 1,615**	$ 1,466	$ 1,383	**$1,218**	$ 1,149	$ 1,252
Items to reconcile core earnings to net income attributed to shareholders:						
Investment-related experience related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes and credit experience	**149**	(125)	482	**122**	(91)	447
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities[2]	**(516)**	164	282	**(388)**	117	247
Integration costs and intangible distribution network write-off[3]	**(114)**	(45)	–	**(87)**	(37)	–
Net income attributed to shareholders	**$ 1,134**	$ 1,460	$ 2,147	**$ 865**	$ 1,138	$ 1,946

(1) Core earnings is a non-GAAP measure. See "Performance and Non-GAAP Measures" below. The 2015 earnings on assets backing capital allocated to each operating segment have been restated to align with the methodology used in 2016.

(2) The direct impact of equity markets and interest rates is relative to our policy liability valuation assumptions and includes changes to interest rate assumptions. Our variable annuity guarantee dynamic hedging strategy is not designed to completely offset the sensitivity of policy liabilities to all risks associated with the guarantees embedded in these products. The US$388 million charge in 2016 (2015 – US$117 million gain) consisted of a US$86 million charge (2015 – US$17 million charge) related to variable annuities that are dynamically hedged, a US$5 million gain (2015 – US$71 million charge) on general fund equity investments supporting policy liabilities, a

US$16 million charge (2015 – US$76 million charge) related to variable annuities that are not dynamically hedged, and a US$291 million charge (2015 – US$281 million gain) related to fixed income reinvestment rates assumed in the valuation of policy liabilities. The amount of variable annuity guaranteed value that was dynamically hedged or reinsured at the end of 2016 was 94% (2015 – 94%).

(3) The 2016 charge of $87 million relates primarily to the intangible asset distribution network write-off in the JH Long Term Care business. The 2015 charge of US$37 million related to one-time integration costs associated with the acquisition of NYL RPS business.

Sales and Gross Flows

Insurance sales in 2016 of US$459 million declined 6% compared with 2015 reflecting continued headwinds from the industry trend back towards products with guaranteed features which we have purposely de-emphasized in our product portfolio. We recorded strong double digit growth in sales of term and international products, two of our key products emphasized for growth. JH Life sales of US$417 million in 2016 decreased 7% from the prior year as the competitive pressures highlighted above more than offset growth in term and international sales and the positive trends emerging in Vitality, our innovative health engagement rider. JH Long Term Care 2016 sales of US$42 million increased 2% from the prior year as sales benefited from the biennial inflation buy-up activity in the U.S. Federal program offset by lower group and retail sales. Effective December 2, 2016, we discontinued new sales of our stand-alone retail individual long-term care product.

Wealth and Asset Management gross flows in 2016 were US$49.4 billion, an increase of 5% compared with 2015, due to strong mid-market pension sales reflecting a full year of sales from the NYL RPS business acquired in April 2015 offset by lower mutual fund sales. Normalizing for the NYL RPS acquisition, annual gross flows were 1% higher than the prior year. Net outflows were US$1.6 billion for the year, compared with net inflows of US$9.5 billion in 2015.

JH Investments gross flows of US$26.2 billion in 2016 decreased 7% compared with 2015. While fund performance improved in 4Q16, our overall sales environment was challenged throughout 2016 by the underperformance of a few key funds earlier in the year, customers' reduced appetite for actively managed solutions, and advisors' focus on impending implementation of the Department of Labor's ("DOL") Fiduciary Rule. Net outflows were US$1.1 billion in 2016 compared with net inflows of US$10.4 billion in 2015 reflecting our lower gross flows and increased redemptions due to the reasons listed above. Assets under management increased 6% from December 31, 2015 to US$88.5 billion as at December 31, 2016.

JH Retirement Plan Services gross flows of US$23.2 billion in 2016 were up 22% compared with 2015 or 11% when normalizing for the NYL RPS acquisition. This was driven primarily by strong mid-market sales, which demonstrated the strength of our expanded capabilities. Net outflows were US$537 million in 2016 compared with net outflows of US$905 million in the prior year. The improvement reflects strong mid-market sales and ongoing contributions which were more than offset by higher mid-market plan terminations unrelated to the business acquired from NYL due to intense pricing and competitive pressures as well as changes in plans' trustee and/or advisor.

Sales

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Insurance products	**$ 608**	$ 625	$ 554	**$ 459**	$ 488	$ 501
Wealth and asset management products	**65,448**	60,567	41,488	**49,364**	47,180	37,570

Revenue

Total revenue in 2016 of US$15.5 billion increased US$7.8 billion compared with 2015 primarily driven by the non-recurrence of the Closed Block reinsurance transaction as well as favourable realized and unrealized gains and losses in 2016 compared with 2015. Revenue before net realized and unrealized investment gains (losses) and the impact of the Closed Block reinsurance transaction was down US$754 million from 2015 as reduced premium income was partially offset by higher other revenue and investment income in Insurance.

Revenue

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Net premium income excluding the Closed Block reinsurance transaction (1)	**$ 6,987**	$ 7,910	$ 6,733	**$ 5,287**	$ 6,183	$ 6,092
Investment income	**6,946**	6,569	6,198	**5,246**	5,145	5,610
Other revenue	**5,591**	5,350	4,531	**4,223**	4,182	4,102
Revenue before items noted below	**19,524**	19,829	17,462	**14,756**	15,510	15,804
Net realized and unrealized gains (losses) (2)	**1,034**	(1,884)	11,271	**790**	(1,621)	10,154
Premium ceded, net of ceded commissions and additional consideration relating to Closed Block reinsurance transaction (1)	**–**	(7,996)	–	**–**	(6,109)	–
Total revenue	**$ 20,558**	$ 9,949	$ 28,733	**$ 15,546**	$ 7,780	$ 25,958

(1) For the purpose of comparable period-over-period reporting, we exclude the $8 billion (US$6.1 billion) impact of the Closed Block reinsurance transaction, which is shown separately, for full year 2015. For other periods as applicable, amounts in this line equal the "net premium income" in note 19 of the Consolidated Financial Statements.

(2) See "Financial Performance – Impact of Fair Value Accounting" above.

Premiums and Deposits

U.S. Division total premiums and deposits for 2016 were US$56 billion, an increase of 2% compared with 2015. Premiums and deposits for insurance products of US$6.2 billion decreased 6% compared with 2015 as sales activity was dampened by competitive pressures. Premiums and deposits for wealth and asset management products were US$49.4 billion, an increase of 5% compared with 2015, reflecting strong deposits in JH RPS from the mid-market business partially offset by lower mutual fund deposits. In other wealth products, premiums and deposits declined 63% due to our reinsuring the remaining 10% of the fixed deferred annuity block in early 2016.

Premiums and Deposits

For the years ended December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
Insurance products[1]	**$ 8,267**	$ 8,528	$ 7,368	**$ 6,239**	$ 6,667	$ 6,665
Wealth and asset management products	**65,448**	60,567	41,488	**49,364**	47,180	37,570
Other wealth products (Annuities)	**557**	1,523	1,297	**435**	1,191	1,176
Total premiums and deposits	**$ 74,272**	$ 70,618	$ 50,153	**$ 56,038**	$ 55,038	$ 45,411

[1] For the purpose of comparable period-over-period reporting, the impact of the 3Q15 Closed Block reinsurance transaction is excluded from insurance products premiums in this table. This transaction resulted in a net ceded premium (negative premium) of approximately $8.0 billion (US$6.1 billion) for the full year 2015.

Assets under Management and Administration

U.S. Division assets under management and administration as at December 31, 2016 were US$406.2 billion, up 5% from December 31, 2015. The increases were driven by investment income and the impact of favourable equity markets on the valuation of mutual fund investments, partially offset by the continued runoff of our Annuities business.

Assets under Management and Administration

As at December 31, ($ millions)	Canadian $			US $		
	2016	2015	2014	**2016**	2015	2014
General fund	**$ 152,040**	$ 149,319	$ 135,173	**$ 113,240**	$ 107,883	$ 116,520
Segregated funds	**191,391**	194,291	174,397	**142,548**	140,377	150,330
Mutual funds and other	**119,486**	116,427	87,450	**88,993**	84,117	75,382
Total assets under management	**462,917**	460,037	397,020	**344,781**	332,377	342,232
Other assets under administration	**82,433**	77,910	1,509	**61,396**	56,290	1,301
Total assets under management and administration	**$ 545,350**	$ 537,947	$ 398,529	**$ 406,177**	$ 388,667	$ 343,533

Strategic Direction

John Hancock is focused on building out our wealth products and advice services, developing a modernized insurance purchase and ownership experience that appeals to a wider demographic, and engaging with our customers in client-focused formats that incorporate our digital capabilities and customer insights.

Throughout 2016, John Hancock continued to enhance our personalized and holistic services to support our clients. This included making certain products available directly to clients, rewarding clients for making healthy decisions, and providing solutions that meet the needs of a broader demographic.

JH Investments' unique approach to asset management enables us to provide a diverse set of investments backed by some of the world's best managers, along with strong risk-adjusted returns across asset classes. Our performance is the result of our manager-of-managers model and our focus on finding and overseeing the best portfolio teams. We also offer ETFs both as a complement to the actively managed funds and in response to investors' changing preferences. In 2016, JH Investments:

- Launched 4 environmental, social and governance ("ESG") funds for investors that integrate ESG issues with fundamental stock research;
- Added 6 new strategic ETF's, bringing the total to 12 differentiated multi-factor investment strategies;
- Increased the number of platforms through which customers may buy our ETFs; and
- Started selling a suite of Undertakings for Collective Investments in Transferable Securities ("UCITS") to make our funds available to non-residents of the U.S.

JH RPS successfully expanded to the mid- and large-plan market segments in 2016, enabled by the capabilities acquired through the successful integration of the New York Life retirement plan services business purchased in 2015. We continued to maintain our focus on the small plan market.

JH Insurance continued to expand our wellness-linked life insurance program through our exclusive partnership with Vitality, the global leader in integrating wellness benefits with life insurance products. By making healthy food and activity choices in a process that encourages customer engagement with John Hancock, clients participating in the Vitality program earn rewards towards their

insurance premiums and discounts with health-based retailers. In addition, we launched a lower-cost term life insurance product, which is a direct-to-consumer insurance option for individuals who are not purchasing through an agent and a product that simplified and expedited the underwriting requirements for eligible clients.

In response to industry trends and stagnant consumer demand, in the fall of 2016 we announced that we will discontinue new sales of our stand-alone individual long-term care product. This decision does not have a material impact on our on-going earnings. We are committed to serving our existing customers and honoring our obligations to our over 1.2 million long-term care policyholders. We intend to continue to offer long-term care coverage as an accelerated benefit rider to our wide range of life insurance products, an increasingly popular alternative to stand-alone long-term care insurance policies in recent years.

John Hancock's broker-dealer, Signator Investors, Inc., successfully completed the acquisition of Transamerica Financial Advisors ("TFA") in 2016, moving Signator into the top 15 broker-dealers in the U.S. by advisor headcount, expanding its customer reach in every state in the country, and broadening its distribution opportunities through TFA's established bank-channel relationships.

Corporate and Other

Corporate and Other is comprised of investment performance on assets backing capital, net of amounts allocated to operating divisions, financing costs, Investment Division's external asset management business (Manulife Asset Management), our Property and Casualty ("P&C") Reinsurance business; and our run-off reinsurance business lines including variable annuities and accident and health.

For segment reporting purposes the impact of updates to actuarial assumptions, settlement costs for macro equity hedges and other non-operating items are included in this segment's earnings. This segment is also where we reclassify favourable investment-related experience to core earnings from items excluded from core earnings, subject to certain limits (see "Performance and Non-GAAP Measures" below). In each of the other segments, we report all investment-related experience in items excluded from core earnings.

In 2016, Corporate and Other contributed 11% of the Company's premiums and deposits and, as at December 31, 2016, accounted for 8% of the Company's assets under management and administration.

Financial Performance

Corporate and Other reported a net loss attributed to shareholders of $832 million for 2016 compared with a net loss of $854 million for 2015. The net loss is comprised of core loss and items excluded from core loss. The core loss was $473 million in 2016 compared with $524 million in 2015; items excluded from core loss amounted to net charges of $359 million in 2016 compared with net charges of $330 million in 2015.

The $51 million decrease in core loss is largely due to the inclusion of $197 million of core investment gains in 2016 compared with nil in 2015 and $73 million in 2016 related to the release of provisions and interest on uncertain tax positions in the U.S. These gains were partially offset by $86 million lower investment income driven by higher interest expense due to debt issuances over the year and lower realized gains on available-for-sale equities, $75 million higher interest allocated to the divisions, $35 million higher expected macro hedging costs and higher expenses in Corporate and Other and strategic investments in our Manulife Asset Management business.

The table below reconciles the net loss attributed to shareholders to the core loss for Corporate and Other for 2016, 2015 and 2014.

For the years ended December 31, ($ millions)	**2016**	2015	2014
Core loss excluding expected cost of macro hedges and core investment gains	**$ (409)**	$ (298)	$ (446)
Expected cost of macro hedges	**(261)**	(226)	(184)
Investment-related experience included in core earnings	**197**	–	200
Total core loss[1]	**(473)**	(524)	(430)
Items to reconcile core loss to net loss attributed to shareholders:			
Direct impact of equity markets and interest rates [2]	**195**	200	(94)
Changes in actuarial methods and assumptions	**(453)**	(451)	(198)
Investment-related experience related to mark-to-market items [3]	**71**	(39)	14
Reclassification to core investment-related experience above	**(197)**	–	(200)
Impact of tax changes, integration and acquisition costs	**(8)**	(40)	–
Restructuring charges and other	**33**	–	12
Net loss attributed to shareholders	**$ (832)**	$ (854)	$ (896)

(1) This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below. The 2015 earnings on assets backing capital allocated to each operating segment have been restated to align with the methodology used in 2016.
(2) The direct impact of equity markets and interest rates included a loss of $120 million (2015 – gain of $234 million) on derivatives associated with our macro equity hedges and a gain of $370 million (2015 – gain of $5 million) on the sale of AFS bonds. Other items in this category netted to a charge of $55 million (2015 – charge of $39 million).
(3) Investment-related experience includes mark-to-market gains or losses on assets held in the Corporate and Other segment other than gains on AFS equities and seed money investments in new segregated or mutual funds.

Revenue

Revenue was $778 million for 2016 compared with $414 million in 2015. The favourable variance was primarily driven by realized gains on available-for-sale bonds, the release of interest on the resolution of tax related positions, and a consolidation adjustment related to interests in structured entities, partially offset by losses on the macro hedging program.

Revenue

For the years ended December 31, ($ millions)	2016	2015	2014
Net premium income	$ 87	$ 90	$ 77
Investment income (loss)[1]	653	130	(23)
Other revenue	545	190	263
Revenue before net realized and unrealized investment gains (losses) and on the macro hedge program	1,285	410	317
Net realized and unrealized gains (losses) [2] and on the macro hedge program	(507)	4	(393)
Total revenue	$ 778	$ 414	$ (76)

[1] Includes gains of $512 million (2015 – losses of $6 million) on the sale of AFS bonds.
[2] See "Financial Performance – Impact of Fair Value Accounting" above.

Premiums and Deposits

Premiums and deposits were $18.4 billion for 2016 compared with $22.2 billion reported in 2015. These amounts primarily relate to Investment Division's external asset management business. (See "Investment Division" below)

Premiums and Deposits

For the years ended December 31, ($ millions)	2016	2015	2014
Life Retrocession	$ 1	$ 2	$ 2
Property and Casualty Reinsurance	86	88	75
Institutional and other deposits	18,300	22,150	8,185
Total premiums and deposits	$ 18,387	$ 22,240	$ 8,262

Assets under Management

Assets under management of $75.7 billion as at December 31, 2016 (2015 – $71.6 billion) included assets managed by Manulife Asset Management on behalf of institutional clients of $79.7 billion (2015 – $71.2 billion) and the Company's own funds of $3.8 billion (2015 – $7.6 billion), partially offset by a $7.8 billion (2015 – $7.2 billion) total company adjustment related to the reclassification of derivative positions net of the cash received as collateral on derivative positions. The decrease in the Company's own funds primarily reflects the impact of higher assets allocated to the operating divisions and the payment of shareholder dividends, partially offset by net issuances of subordinated debt and preferred shares during the year.

Assets under Management

As at December 31, ($ millions)	2016	2015	2014
General fund	$ (3,847)	$ 485	$ 5,242
Segregated funds – elimination of amounts held by the Company	(177)	(171)	(202)
Institutional advisory accounts	79,760	71,237	41,573
Total assets under management	$ 75,736	$ 71,551	$ 46,613

Strategic Direction

With respect to our overall Company strategy, we have a matrix organization to ensure that we leverage our global scale and sharing of best practices. As such, we continue to add strength to our Group Functions as well as in the operating divisions in the areas of innovation, marketing and technology.

With respect to the businesses whose results are reported in the Corporate and Other results:

Our P&C Reinsurance business provides substantial retrocessional capacity for a very select clientele in the property and casualty reinsurance market. We continue to manage the risk exposures of this business in relation to the total Company balance sheet risk and volatility as well as the prevailing market pricing conditions.

The strategic direction for our Manulife Asset Management business is included in the "Investment Division" section that follows.

Investment Division

Manulife's Investment Division manages the Company's general fund assets and, through Manulife Asset Management ("MAM"), provides comprehensive asset management and asset allocation solutions to institutional clients and investment funds, and investment management services to retail clients through Manulife and John Hancock product offerings.

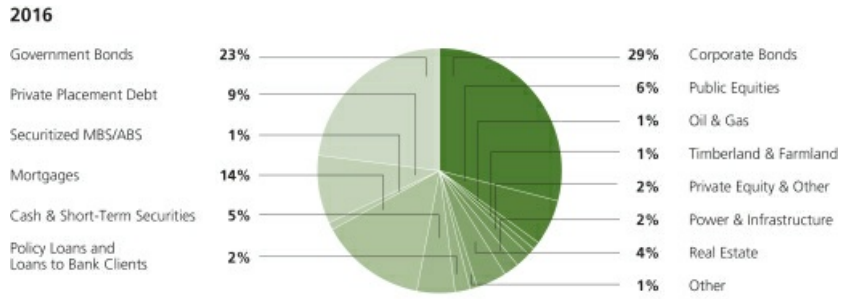
We have expertise managing a broad range of investments including public and private bonds, public and private equities, commercial mortgages, real estate, power and infrastructure, timberland, farmland, and oil and gas. With a team of more than 3,400 employees, the Investment Division has a physical presence in key markets, including the United States, Canada, the United Kingdom, Hong Kong, Japan, and Singapore. In addition, MAM has a joint venture asset management business in mainland China, Manulife TEDA Fund Management Company Ltd.

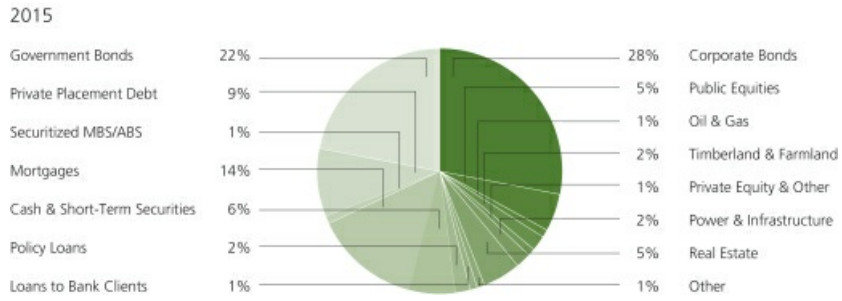
General Fund

Our investment philosophy for the General Fund is to invest in an asset mix that optimizes our risk adjusted returns and matches the characteristics of our underlying liabilities. We follow a bottom-up approach which combines our strong asset management skills with an in-depth understanding of the characteristics of each investment. We invest in a diversified mix of assets, including a variety of alternative long-duration asset classes. Our diversification strategy has historically produced superior risk adjusted returns while reducing overall risk. We use a disciplined approach across all asset classes and we do not chase yield in the riskier end of the fixed income market. This strategy has resulted in a well-diversified, high quality investment portfolio, which has historically delivered strong investment-related experience through-the-cycle. Our risk management strategy is outlined in the "Risk Management" section below.

General Fund Assets

As at December 31, 2016, our General Fund invested assets totaled $321.9 billion compared with $307.5 billion at the end of 2015. The following charts show the asset class composition as at December 31, 2016 and December 31, 2015.





Investment Income

For the year ended December 31, 2016	2016		2015	
($ millions, unless otherwise stated)	Income	Yield[1]	Income	Yield[1]
Interest income	$ 10,533	3.40%	$ 10,114	3.40%
Dividend, rental and other income	2,277	0.70%	1,893	0.60%
Impairments	(206)	(0.10%)	(633)	(0.20%)
Other, including gains (losses) on sale of AFS debt securities	786	0.20%	91	–
Investment income before realized and unrealized gains on assets supporting insurance and investment contract liabilities and on macro equity hedges	$ 13,390		$ 11,465	
Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on macro equity hedges				
Debt securities	$ 1,662	0.50%	$ (3,957)	(1.30%)
Public equities	985	0.30%	(513)	(0.20%)
Mortgages and private placements	92	–	373	0.10%
Alternative long-duration assets and other investments	976	0.30%	1,335	0.40%
Derivatives, including macro equity hedging program	(2,581)	(0.80%)	(300)	(0.10%)
	$ 1,134		$ (3,062)	
Total investment income	$ 14,524	4.70%	$ 8,403	2.90%

[1] Yields are based on IFRS income and are calculated using the geometric average of assets held at IFRS carrying value during the reporting period.

In 2016, the $14.5 billion of investment income (2015 – $8.4 billion) consisted of:

- $13.4 billion of investment income before net realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities and on macro equity hedges (2015 – $11.5 billion), and;
- $1.1 billion of net realized and unrealized gains on assets supporting insurance and investment contract liabilities and on macro equity hedges (2015 – loss of $3.1 billion).

The $1.9 billion increase in net investment income before unrealized and realized gains was due to higher income of $0.8 billion primarily from higher interest and dividend income, $0.7 billion higher gains on surplus assets and $0.4 billion mainly from lower impairments on oil and gas properties in 2016.

The change in net realized and unrealized gains related to the changes in interest rates and equity markets. In 2016, the general decrease in the U.S. interest rates resulted in gains of $1.7 billion (2015 – losses of $4.0 billion) on debt securities. The increase in equity markets in 2016 resulted in gains of $1.0 billion (2015 – losses of $0.5 billion) on public equities supporting insurance and investment contract liabilities. Net losses of $2.6 billion on derivatives in 2016, including the macro equity hedging program, primarily related to losses on short equity contracts as a result of increases in major stock indices during the year.

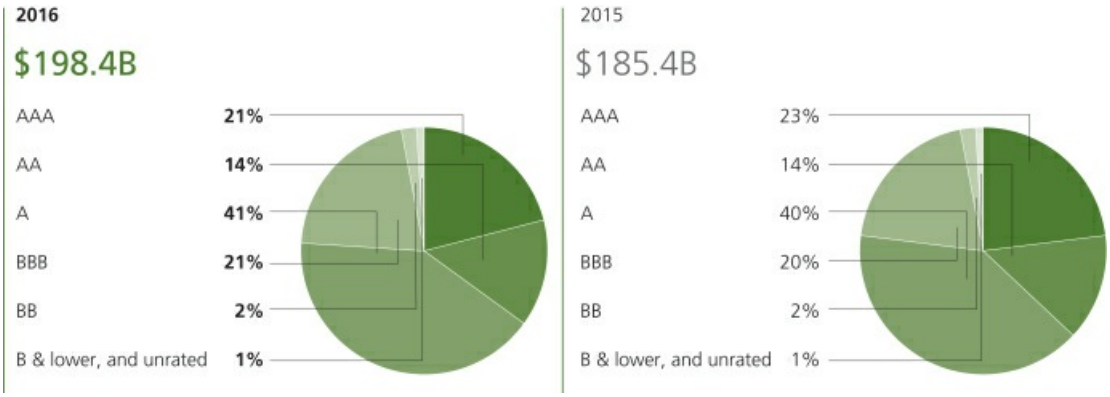
As the measurement of insurance and investment contract liabilities includes estimates regarding future expected investment income on assets supporting the insurance and investment contract liabilities, only the difference between the mark-to-market accounting on the measurement of both assets and liabilities impacts net income. Refer to “Financial Performance” above.

Debt Securities and Private Placement Debt

We manage our high quality fixed income portfolio to optimize yield and quality while ensuring that asset portfolios remain diversified by sector, industry, duration, issuer, and geography. As at December 31, 2016, our fixed income portfolio of $198.4 billion (2015 – $185.4 billion) was 97% investment grade and 76% was rated A or higher (2015 – 97% and 77%, respectively). Our private placement debt holdings provide diversification benefits (issuer, industry, and geography) and, because they often have stronger protective covenants and collateral than debt securities, they typically provide better credit protection and potentially higher recoveries in the event of default. Geographically, 29% is invested in Canada (2015 – 29%), 47% is invested in the U.S. (2015 – 48%), 3% is invested in Europe (2015 – 4%) and the remaining 21% is invested in Asia and other geographic areas (2015 – 19%).

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Debt Securities and Private Placement Debt – by Credit Quality [1]



[1] Reflects credit quality ratings as assigned by Nationally Recognized Statistical Rating Organizations ("NRSRO") using the following priority sequence order: Standard & Poor's, Moody's, Dominion Bond Rating Service, Fitch, Rating and Investment Information, and Japan Credit Rating. For those assets where ratings by NRSRO are not available, disclosures are based upon internal ratings as described in the "Risk Management" and "Risk Factors" sections below.

	2016			2015		
As at December 31, Per cent of carrying value	Debt securities	Private placement debt	Total	Debt securities	Private placement debt	Total
Government and agency	**43**	**10**	**38**	44	11	39
Utilities	**14**	**49**	**19**	14	49	19
Financial	**14**	**5**	**13**	14	7	13
Industrial	**6**	**9**	**7**	6	8	6
Consumer (non-cyclical)	**5**	**12**	**6**	5	9	6
Energy – Oil & Gas	**5**	**5**	**5**	4	5	4
Energy – Other	**3**	**1**	**3**	3	2	3
Basic materials	**2**	**3**	**2**	2	3	2
Consumer (cyclical)	**2**	**5**	**2**	2	6	2
Securitized (MBS/ABS)	**2**	**1**	**2**	2	–	2
Telecommunications	**2**	**–**	**1**	2	–	2
Technology	**1**	**–**	**1**	1	–	1
Media and internet and other	**1**	**–**	**1**	1	–	1
Total per cent	**100**	**100**	**100**	100	100	100
Total carrying value ($ billions)	**$ 168.6**	**$ 29.8**	**$ 198.4**	$ 157.8	$ 27.6	$ 185.4

As at December 31, 2016, gross unrealized losses on our fixed income holdings were $3.5 billion or 2% of the amortized cost of these holdings (2015 – $3.0 billion or 2%). Of this amount, $35 million (2015 – $55 million) related to debt securities trading below 80% of amortized cost for more than 6 months. Securitized assets represented $23 million of the gross unrealized losses and $2 million of the amounts trading below 80% of amortized cost for more than 6 months (2015 – $18 million and none, respectively). After adjusting for debt securities held in participating policyholder and pass-through segments and the provisions for credit included in the insurance and investment contract liabilities, the potential impact to shareholders' pre-tax earnings for debt securities trading at less than 80% of amortized cost for greater than 6 months was approximately $34 million as at December 31, 2016 (2015 – $46 million).

Mortgages

As at December 31, 2016, mortgages represented 14% of invested assets (2015 – 14%) with 61% of the mortgage portfolio invested in Canada (2015 – 63%) and 39% in the U.S. (2015 – 37%). As shown below, the overall portfolio is also diversified by geographic region, property type, and borrower. Of the total mortgage portfolio, 19% is insured (2015 – 20%), primarily by the Canada Mortgage and Housing Corporation ("CMHC") – Canada's AAA rated government backed national housing agency, with 43% of residential mortgages insured (2015 – 45%) and 3% of commercial mortgages insured (2015 – 4%).

As at December 31, ($ billions)	2016 Carrying value	2016 % of total	2015 Carrying value	2015 % of total
Commercial				
Retail	**$ 8.2**	**18**	$ 8.0	18
Office	**7.3**	**17**	7.1	16
Multi-family residential	**4.8**	**11**	4.6	11
Industrial	**2.8**	**6**	2.8	7
Other commercial	**2.6**	**6**	2.8	6
Other mortgages	**25.7**	**58**	25.3	58
Manulife Bank single-family residential	**17.7**	**40**	17.5	40
Agricultural	**0.8**	**2**	1.0	2
Total mortgages	**$ 44.2**	**100**	$ 43.8	100

Our commercial mortgage loans are originated with a hold-for-investment philosophy. They have low loan-to-value ratios, high debt-service coverage ratios, and as at December 31, 2016 there were no loans in arrears. Geographically, of the total mortgage loans, 37% are in Canada and 63% are in the U.S. (2015 – 40% and 60%, respectively). We are diversified by property type and largely avoid risky market segments such as hotels, construction loans and second liens.

Non-CMHC Insured Commercial Mortgages [1]

As at December 31,	2016 Canada	2016 U.S.	2015 Canada	2015 U.S.
Loan-to-Value ratio [2]	**64%**	**56%**	62%	57%
Debt-Service Coverage ratio [2]	**1.47x**	**1.90x**	1.56x	2.01x
Average duration	**4.2 years**	**6.4 years**	3.7 years	6.2 years
Average loan size ($ millions)	**$11.4**	**$17.1**	$ 10.0	$ 16.1
Loans in arrears [3]	**0.00%**	**0.00%**	0.07%	0.00%

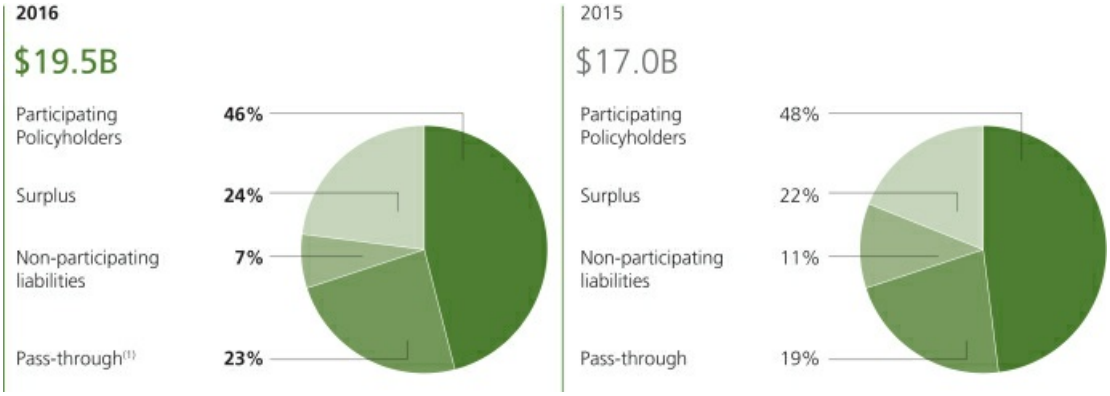
[1] Excludes Manulife Bank commercial mortgage loans of $67 million (2015 – $50 million).
[2] Loan-to-Value and Debt-Service Coverage are based on re-underwritten cash flows.
[3] Arrears defined as over 90 days past due in Canada and over 60 days past due in the U.S.

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Public Equities

As at December 31, 2016, public equity holdings of $19.5 billion represented 6% (2015 – $17.0 billion and 5%) of invested assets and, when excluding participating policyholder and pass-through segments, represented 2% (2015 – 2%) of invested assets. The portfolio is diversified by industry sector and issuer. Geographically, 33% (2015 – 33%) is held in Canada, 37% (2015 – 37%) is held in the U.S., and the remaining 30% (2015 – 30%) is held in Asia, Europe and other geographic areas.

Public Equities – by Segment



(1) Public equities denoted as pass-through are held by the Company to support the yield credited on equity-linked investment funds for Canadian life insurance products.

Alternative Long-Duration Assets ("ALDA")

Our alternative long-duration asset portfolio is comprised of a diverse range of asset classes with varying degrees of correlations. The portfolio typically consists of private assets representing investments in varied sectors of the economy which act as a natural hedge against future inflation and serve as an alternative source of asset supply to long-term corporate bonds. In addition to being a suitable match for our long-duration liabilities, these assets provide enhanced long-term yields and diversification relative to traditional fixed income markets. The vast majority of our alternative long-duration assets are managed in-house.

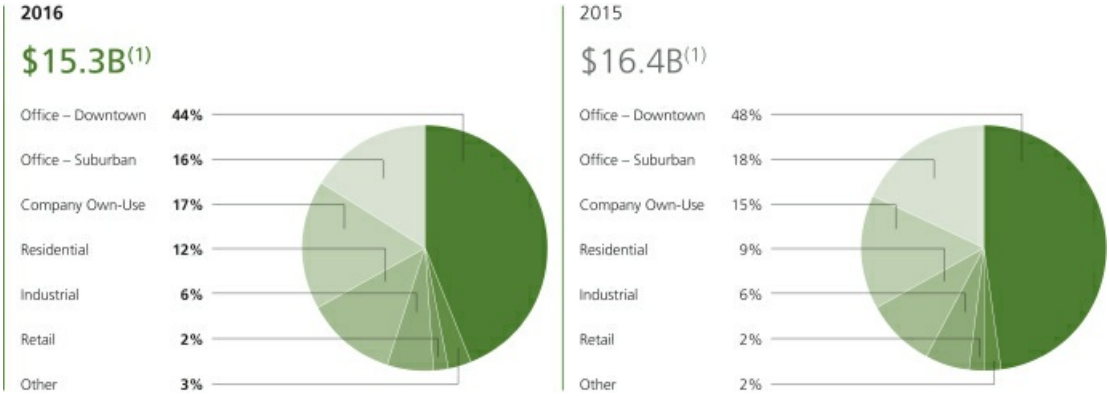
As at December 31, 2016, alternative long-duration assets of $33.0 billion represented 10% (2015 – $31.6 billion and 10%) of invested assets. The fair value of total ALDA was $34.5 billion at December 31, 2016 (2015 – $32.7 billion). The carrying value and corresponding fair value by sector and/or asset type as follows:

As at December 31, ($ billions)	**2016** Carrying value	**2016** Fair value	2015 Carrying value	2015 Fair value
Real estate	**$ 14.1**	**$ 15.3**	$ 15.3	$ 16.4
Power and infrastructure	**6.7**	**6.7**	5.3	5.3
Private equity	**4.6**	**4.6**	3.8	3.8
Timberland	**3.7**	**3.7**	3.6	3.6
Oil & gas	**2.1**	**2.1**	1.7	1.7
Farmland	**1.3**	**1.6**	1.5	1.5
Other	**0.5**	**0.5**	0.4	0.4
Total ALDA	**$ 33.0**	**$ 34.5**	$ 31.6	$ 32.7

Real Estate

Our real estate portfolio is diversified by geographic region; of the total fair value of this portfolio, 59% is located in the U.S., 35% in Canada, and 6% in Asia as at December 31, 2016 (2015 – 63%, 31%, and 6%, respectively). This high quality portfolio has virtually no leverage and is primarily invested in premium urban office towers, concentrated in cities with stable growth, and highly diverse economies, in North America and Asia. The portfolio is well positioned with an average occupancy rate of 94% (2015 – 93%) and an average lease term of 6.1 years (2015 – 6.2 years). During 2016, we executed 5 acquisitions, representing $0.4 billion market value of commercial real estate assets (2015 – 6 acquisitions and $2.2 billion).

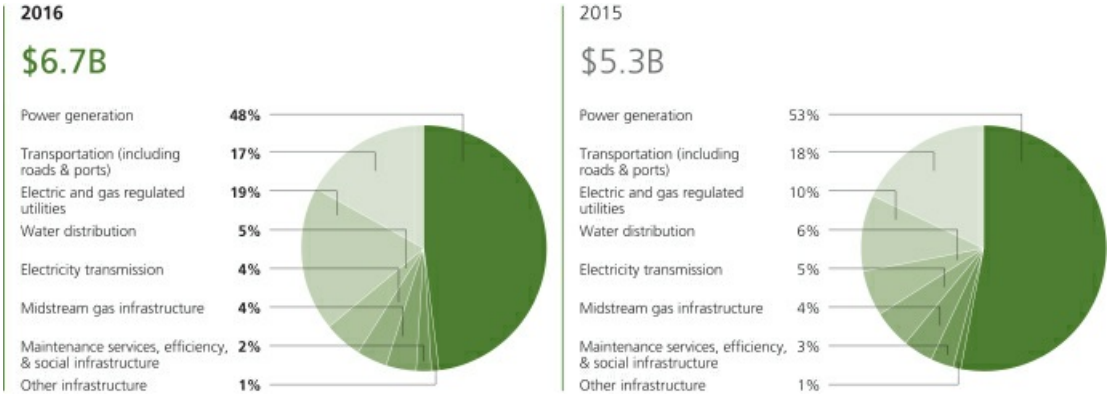
The segment composition of our real estate portfolio based on fair value is as follows:



(1) These figures represent the fair value of the real estate portfolio. The carrying value of the portfolio was $14.1 billion and $15.3 billion at December 31, 2016 and December 31, 2015, respectively.

Power & Infrastructure

We invest both directly and through funds in a variety of industry specific asset classes, listed below. The portfolio is well diversified with over 300 portfolio companies. The portfolio is predominately invested in the U.S. and Canada, but also in the United Kingdom, Europe and Australia. Our power and infrastructure holdings are as follows:



Timberland & Farmland

Our timberland and farmland assets are managed by a proprietary entity, Hancock Natural Resources Group ("HNRG"). In addition to being the world's largest timberland investment manager for institutional investors[1], with timberland properties in the U.S., New Zealand, Australia, Chile, Canada and Brazil, HNRG also manages farmland properties in the U.S., Australia and Canada. In 2011, HNRG established a renewable energy business unit focused on investments in the bio-energy sector. The General Fund's timberland portfolio comprised 23% of HNRG's total timberland assets under management ("AUM") (2015 – 19%). The farmland portfolio includes annual (row) crops, fruit crops, wine grapes, and nut crops. The General Fund's holdings comprised 40% of HNRG's total farmland AUM (2015 – 42%).

Private Equities

Our private equity portfolio of $4.6 billion (2015 – $3.8 billion) includes both directly held private equity and private equity funds. Both are diversified across vintage years and industry sectors.

Oil & Gas

This category is comprised of $0.9 billion (2015 – $0.8 billion) in our conventional Canadian oil and gas properties managed by our subsidiary, NAL Resources, and various other oil and gas private equity interests of $1.2 billion (2015 – $0.9 billion). Production mix for conventional oil and gas assets in 2016 was approximately 40% crude oil, 45% natural gas, and 15% natural gas liquids (2015 – 44%, 43%, and 13%, respectively). Private equity interests are a combination of both producing and mid-streaming assets.

In 2016, the carrying value of our oil and gas holdings, increased by $0.4 billion and the fair value increased by $0.4 billion, driven by the rebound in commodity prices.

In 2015, the fair value of our oil and gas investments declined by $0.6 billion, excluding the impact of currency, and as noted in the "Financial Performance" section, we reported $876 million of post-tax investment-related experience losses related to the sharp decline in oil and gas prices. The pre-tax investment-related experience loss in 2015 was greater than the fair value decline as the investment-related experience compares actual returns to expected returns used in the valuation of policy liabilities. Refer to "Critical Accounting and Actuarial Assumptions" below.

Manulife Asset Management

Manulife Asset Management ("MAM") provides comprehensive asset management solutions to institutional clients (such as pension plans, foundations, endowments and financial institutions) and investment funds, and investment management services to retail clients through Manulife and John Hancock product offerings.

As at December 31, 2016, MAM had $460.7 billion of AUM compared with $433.9 billion at the end of 2015. This includes $80.1 billion (2015 – $71.5 billion) of comprehensive asset management and asset allocation solutions to institutional clients and $303.2 billion (2015 – $290.1 billion) of investment funds and investment management services to retail clients through Manulife and John Hancock product offerings, as well as $77.4 billion (2015 – $72.3 billion) related to our general fund assets.

In 2016, MAM AUM increased $26.8 billion from 2015 driven by positive market performance, significant institutional mandate wins and growth in general fund AUM, partially offset by currency translation losses on external clients AUM.

The following charts show the movement in AUM over the year as well as by asset class.

AUM Movement

($ billions)	2016	2015
MAM External AUM, Beginning	**$ 361.6**	$ 277.6
Standard Life acquisition	**–**	26.0
Standard Chartered Bank's MPF business acquisition	**1.9**	–
Gross Institutional flows	**18.3**	22.1
Institutional redemptions	**(9.8)**	(7.7)
Net Institutional flows	**8.5**	14.4
Net Affiliate flows [1]	**0.5**	0.8
Asset transfers	**2.7**	(2.8)
Market impact	**15.4**	0.9
Currency impact	**(7.3)**	44.7
MAM External AUM, Ending	**383.3**	361.6
General Fund AUM (managed by MAM), Beginning [2]	**72.3**	54.4
Net flows, market and currency impacts	**5.1**	17.9
General Fund AUM (managed by MAM), Ending [2]	**77.4**	72.3
Total MAM AUM	**$ 460.7**	$ 433.9

[1] Affiliate flows and redemptions related to activities of the three operating divisions (U.S., Canada and Asia)
[2] 2015 beginning and ending General Fund assets have been restated to include the fair value of the real estate portfolios managed by MAM for comparative purposes.

[1] Based on the global timber investment management organization ranking in the *RISI International Timberland Ownership and Investment Database*.

Net Institutional and Affiliate Flows

In 2016, net institutional flows of $8.5 billion were primarily driven by sales from new and existing institutional clients in Canada, Asia and the U.S. led by strategic fixed income, liability-driven investing (LDI) and Canadian fixed income strategies. Affiliate net flows of $0.5 billion were primarily driven by strong flows from mutual funds across all regions and strong net flows from Asia retirement products and insurance, partially offset by net outflows from U.S. variable annuities and retirement products.

AUM Composition

As at December 31, ($ billions)	2016	2015
Affiliate / Retail[1]:		
Fixed income	**$ 104.1**	$ 93.2
Balanced	**22.0**	22.6
Equity	**103.4**	94.7
Asset allocation[2]	**71.2**	77.5
Alternatives	**2.5**	2.1
	303.2	290.1
Institutional:		
Fixed income	**48.3**	38.7
Balanced	**1.9**	2.3
Equity	**14.9**	14.3
Asset allocation[2]	**0.1**	0.1
Alternatives	**14.9**	16.1
	80.1	71.5
MAM External AUM	**383.3**	361.6
General Fund		
Fixed income	**42.0**	36.6
Equity	**14.9**	13.7
Alternative long-duration assets[3]	**20.5**	22.0
General Fund AUM (managed by MAM)	**77.4**	72.3
Total MAM AUM	**$ 460.7**	$ 433.9

(1) Includes 49% of assets managed by Manulife TEDA Fund Management Company Ltd.
(2) Internally-managed asset-allocation assets included in other asset categories to eliminate double counting: $74.8 billion and $66.7 billion in 2016 and 2015, respectively, in Affiliate/Retail, and $0.04 billion and $0.4 billion in 2016 and 2015, respectively, in Institutional Advisory.
(3) December 2015 comparative amounts for General Fund ALDA have been restated to include the fair value of the real estate portfolios managed by MAM.

Total MAM External AUM by Client Geography

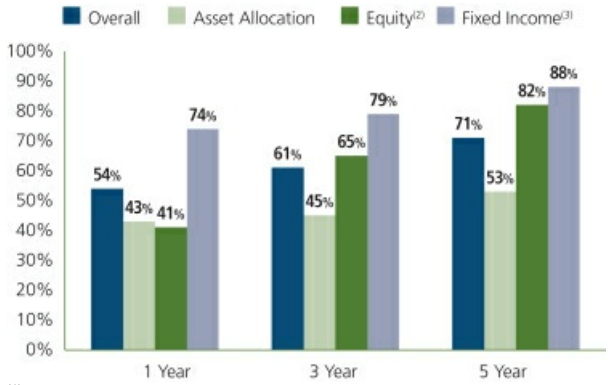
We operate from offices in 16 countries and territories, managing local and international investment products for our global client base.

As at December 31, ($ billions)	2016	%	2015	%
U.S.	**$ 217.4**	**57**	$ 220.4	61
Canada	**100.4**	**26**	87.2	24
Asia region	**60.6**	**16**	50.7	14
Europe and other region	**4.9**	**1**	3.3	1
Total MAM External AUM	**$ 383.3**	**100**	$ 361.6	100

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Investment Performance

% of AUM Outperforming Benchmarks (1)



As at December 31, 2016, overall investment performance has consistently exceeded our benchmarks on a 1, 3 and 5-year basis.

(1) Investment performance is based on actively managed MAM Public Markets account-based, asset-weighted performance versus their primary internal targets, which includes accounts managed by portfolio managers of MAM. Some retail accounts are evaluated net of fees versus their respective Morningstar peer group. All institutional accounts and all other retail accounts are evaluated gross of fees versus their respective index.
(2) Includes balanced funds.
(3) Includes money market funds.

Long-term investment performance continued to be a differentiator for MAM, with the majority of public asset classes outperforming their benchmarks on a 1-, 3- and 5-year basis. At December 31, 2016, MAM had 112 Four- or Five-star Morningstar rated funds[1], an increase of 17 funds since December 31, 2015. In 2015, the number of Four- or Five-star Morningstar rated funds increased by 23.

Strategic Direction

The demand for multi-asset class solutions, liability-driven investing ("LDI"), real assets, global and emerging market equities, and public and private fixed income persists as institutional and retail investors continue to seek higher risk-adjusted returns. MAM's strategic priorities are designed to continue to capitalize on this demand by closely aligning our global wealth and asset management business and leveraging our skills and expertise across our international operations to build long-lasting customer relationships. MAM increased its ranking amongst global asset managers from 32nd to 28th largest asset manager by Pension & Investments' institutional money manager survey as of December 31, 2015. The ranking, published in its May 30, 2016 issue, covered 604 global asset management firms.[2]

MAM's strategy is founded upon key differentiators: offering private and public multi-assets to holistically address client needs, providing alpha-focused active management in a boutique environment, and leveraging best-in-class global capabilities and expertise. This strategy is integral to Manulife's overall strategy of continuing to build and integrate our global wealth and asset management businesses, as well as expand our investment and/or sales offices into key markets, not restricting ourselves to geographies where we currently have, or expect to have, insurance operations. Wealth and Asset Management is a truly global business – both in demand and supply. Customers in any given location have the desire for globally-sourced product, and customers with our global product will benefit from on-the-ground perspectives generated by our investment professionals situated in diverse parts of the world, but globally networked and supervised for quality control.

In 2016, we continued our efforts to expand our distribution footprint beyond where we have historically had insurance operations. We launched a Singapore-listed real estate investment trust (REIT), an innovative investment solution that leveraged Manulife's global capabilities that allowed investors in Asia to access U.S.-based real estate properties. To support expansion into the European and Latin American markets, we expanded our London regional headquarters, including key hires in both the distribution and investment teams. To lead our expansion into the growing alternative asset space, we have appointed a new head of our liquid alternative investments team to broaden our range of absolute return and outcome-oriented capabilities, including stand-alone and multi-asset class strategy solutions.

See "Performance by Business Line" section below for additional information with respect to our globally diversified wealth and asset management franchise.

[1] For each fund with at least a 3-year history, Morningstar calculates a Morningstar Rating based on a Morningstar Risk-Adjusted Return that accounts for variation in a fund's monthly performance (including effects of sales charges, loads and redemption fees), placing more emphasis on downward variations and rewarding consistent performance. The top 10% of funds in each category, the next 22.5%, 35%, 22.5% and bottom 10% receive 5, 4, 3, 2 or 1 star, respectively. The overall Morningstar Rating for a fund is derived from a weighted average of the performance associated with its 3-, 5- and 10 year (if applicable) Morningstar Rating metrics. Past performance is no guarantee of future results. The overall rating includes the effects of sales charges, loads and redemption fees, while the load-waived does not. Load-waived rating for Class A shares should only be considered by investors who are not subject to a front-end sales charge.
[2] Based on the institutional trade publication, *Pension & Investments*. Basis of measurement is institutional AUM.

Performance by Business Line

Additional information for Wealth and Asset Management

Manulife has a globally diversified wealth and asset management ("WAM") franchise spanning mutual funds, group retirement and savings products, and institutional asset management capabilities across all major asset classes. We have achieved strong growth through expanding our broad-based extensive distribution platforms in the U.S., Canada, Asia, and now Europe, and leveraging our global asset management expertise. With investment professionals on the ground in 16 countries, our deep local knowledge, and expertise in sought after asset classes such as alternative long-duration assets, positions us well for continued success. In addition to mutual fund businesses in 11 markets, we have leading retirement platforms in Canada, the U.S. and Hong Kong, and increased our presence in Indonesia and Malaysia. We continue to invest in these businesses, including the Standard Life and New York Life acquisitions in 2015 and Standard Chartered's MPF and ORSO acquisition and distribution agreement in 2016.

We provide additional financial information by line of business, to supplement our existing primary disclosure based on geographic segmentation. This information is intended to facilitate assessment of the financial performance of our WAM businesses and allows for relevant comparisons to be made with global asset management peers. The supplemental information for WAM businesses includes an income statement, core earnings, core earnings before interest, taxes, depreciation and amortization ("core EBITDA"), net flows, gross flows and assets under management and administration ("AUMA")[1]. Core EBITDA was selected as a key performance indicator for WAM businesses, as EBITDA is widely used among asset management peers, and core earnings is a primary profitability metric for the Company overall.

Wealth and Asset Management highlights

For the years ended December 31, ($ millions, unless otherwise stated)	**2016**	2015	2014
Core earnings[(1)]	**$ 629**	$ 630	$ 502
Core EBITDA[(2)]	**1,167**	1,224	980
Net flows	**15,265**	34,387	18,335
Gross flows	**120,450**	114,686	69,164
Assets under management ("AUM") ($ billions)	**461**	433	315
Assets under management and administration ("AUMA") [(3)] ($ billions)	**544**	510	315

(1) WAM core earnings by division are outlined in the section "Core earnings by line of business by division" below.
(2) Table below provides a reconciliation of core EBITDA to core earnings.
(3) Table below provides a continuity of AUMA.

Financial performance

In 2016, our global WAM businesses contributed $629 million to core earnings, in line with 2015. The core earnings contribution from higher fee income on higher asset levels as well as higher tax benefits in the U.S. were offset by changes in business mix, fee compression in the U.S. pension business and strategic investments to optimize our operational infrastructure and to expand our distribution reach in Europe and Asia.

In 2016, core EBITDA for our global WAM businesses was $1,167 million, higher than core earnings by $538 million. In 2015, core EBITDA was $1,224 million, higher than core earnings by $594 million. The decrease of $57 million in core EBITDA primarily reflects changes in business mix, fee compression in the U.S. pension business, and strategic investments to optimize our operational infrastructure and to expand our distribution reach in Europe and Asia, partially offset by higher fee income on higher asset levels.

Core EBITDA

For the years ended December 31, ($ millions)	**2016**	2015	2014
Core earnings	**$ 629**	$ 630	$ 502
Amortization of deferred acquisition costs and other depreciation	**336**	327	237
Amortization of deferred sales commissions	**103**	106	90
Core income tax (expense) recovery	**99**	161	151
Core EBITDA	**$ 1,167**	$ 1,224	$ 980

[1] Core earnings, core EBITDA, net flows, gross flows, assets under management, and assets under management and administration are non-GAAP measures. See "Performance and Non-GAAP Measures" below.

AUMA

In 2016, AUMA for our wealth and asset management businesses increased from $510 billion to $544 billion. Net flows accounted for $15 billion of the increase and the remaining $17 billion was related to positive market performance and the acquisition of Standard Chartered's MPS and ORSO assets in Hong Kong. 2016 marked the 7th year of consecutive positive quarterly net flows in our WAM businesses. The positive net flows in 2016 were driven by our institutional advisory business and our mutual funds businesses in Asia and Canada, partially offset by outflows in our North American pension businesses as well as a challenging U.S. mutual fund environment and the underperformance of a few key funds earlier in the year. Net flows were $19 billion lower than in 2015, driven by outflows in U.S. mutual funds and lower institutional sales.

AUMA

For the years ended December 31, ($ billions)	**2016**	2015	2014
Balance January 1,	**$ 510**	$ 315	$ 259
Acquisitions	**2**	109	–
Net flows	**15**	34	18
Impact of markets and other	**17**	52	38
Balance December 31,	**$ 544**	$ 510	$ 315

Additional information by business line

The following tables provide additional information on our core earnings by WAM, Insurance and Other Wealth for each of the divisions. Other Wealth consists of variable and fixed annuities, single premium products sold in Asia, and Manulife Bank in Canada[1] and Insurance includes all individual and group insurance businesses.

Financial Performance

As noted above, in 2016 our global WAM businesses contributed $629 million to core earnings, in line with 2015.

Core earnings in our global insurance businesses in 2016 was $2,492 million, an increase of 19% compared with 2015. The increase was primarily a result of higher sales and in-force growth in Asia and the strengthening of the U.S. dollar and Japanese yen compared with the Canadian dollar.

Core earnings in our global other wealth businesses in 2016 was $1,368 million, an increase of 10% compared with 2015. The increase was primarily related to strong sales in Asia, lower amortization of deferred acquisition costs and the release of tax and related provisions in the U.S. as well as the strengthening of the U.S. dollar compared with the Canadian dollar.

Core earnings by line of business

For the years ended December 31, ($ millions)	**2016**	2015	2014
Wealth and Asset Management	**$ 629**	$ 630	$ 502
Insurance	**2,492**	2,097	1,864
Other Wealth	**1,368**	1,245	965
Corporate and Other[(1)]	**(468)**	(544)	(443)
Total core earnings	**$ 4,021**	$ 3,428	$ 2,888

(1) Excludes Manulife Asset Management results that are included in WAM.

1 Manulife Bank new loan volumes are no longer being reported as sales.

Core earnings by line of business by division

For the years ended December 31, ($ millions)	2016	2015	2014
Wealth and Asset Management[1]			
Asia	**$ 175**	$ 159	$ 126
Canada	**161**	141	100
U.S.	**298**	310	263
Corporate and Other[2]	**(5)**	20	13
Total Wealth and Asset Management	**629**	630	502
Insurance			
Asia	**994**	811	667
Canada	**763**	621	471
U.S.	**735**	665	726
Total Insurance	**2,492**	2,097	1,864
Other Wealth[3]			
Asia	**327**	264	215
Canada			
Manulife Bank	**114**	123	123
Canada excluding Manulife Bank	**345**	367	233
Total Canada	**459**	490	356
U.S.	**582**	491	394
Total Other Wealth	**1,368**	1,245	965
Corporate and Other[4]	**(468)**	(544)	(443)
Total core earnings	**$ 4,021**	$ 3,428	$ 2,888

(1) Wealth and Asset Management is comprised of our fee-based global WAM businesses that do not contain material insurance risk including: mutual funds, group retirement and institutional asset management.
(2) Corporate and Other results are net of internal allocations to other divisions.
(3) Other Wealth includes variable and fixed annuities, single premium products sold in Asia and Manulife Bank.
(4) A portion of core earnings from Investment Division has been included in Wealth and Asset Management.

AUMA by line of business

AUMA as at December 31, 2016 was a record for Manulife of $977 billion, an increase of $42 billion, or 6% on a constant currency basis, compared with December 31, 2015. The WAM portion of AUMA was $544 billion and increased $33.4 billion. The increase was driven by investment returns and continued positive net flows.

As at December 31, ($ billions)	2016	2015	2014
Wealth and Asset Management	**$ 543.9**	$ 510.5	$ 314.5
Insurance	**262.8**	246.1	213.8
Other Wealth	**174.4**	178.3	157.8
Corporate and Other	**(4.0)**	0.3	5.0
Total assets under management and administration	**$ 977.1**	$ 935.2	$ 691.1

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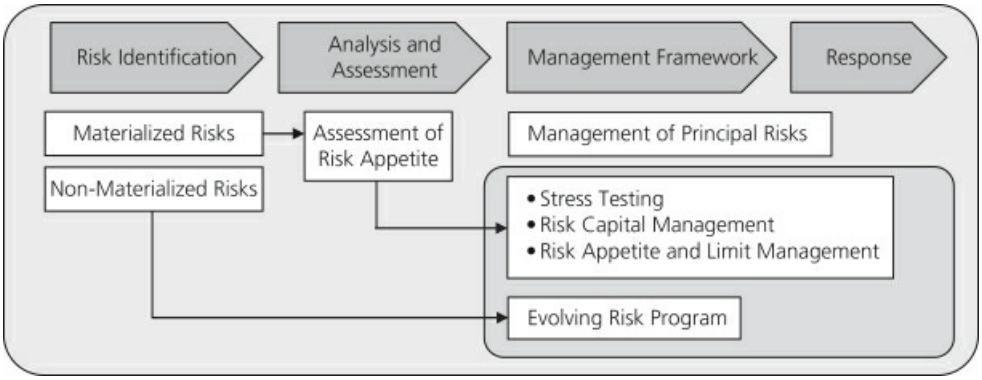
Risk Management

This section provides an overview of the Company's overall risk management approach and more specific strategies for our principal risks. A more detailed description of specific risks which may affect our results of operations or financial condition may be found in the "Risk Factors" section below.

Overview

All of the Company's activities involve elements of risk taking. The objective is to balance the level of risk with business, growth and profitability goals, in order to provide integrated customer solutions, while achieving consistent and sustainable performance over the long-term that benefits the Company and its stakeholders.

Enterprise Risk Management ("ERM") Framework



Our ERM Framework provides a structured approach to implementing risk taking and risk management activities across the enterprise, supporting our long-term revenue, earnings and capital growth strategy. It is communicated through risk policies and standards which are intended to enable consistent design and execution of strategies across the organization. We have a common approach to managing all risks to which the Company is exposed, and to evaluating potential directly comparable risk-adjusted returns on contemplated business activities. Our risk policies and standards cover:

- Assignment of accountability and delegation of authority for risk oversight and risk management;
- The types and levels of risk the Company seeks given its strategic plan and risk appetite;
- Risk identification, measurement, assessment and mitigation which enable effective management and monitoring of risk; and
- Validation, back testing and independent oversight to confirm that the Company generated the risk profile it intended and the root cause analysis of any notable variation.

Our risk management practices are influenced and impacted by internal and external factors (such as economic conditions, political environments, technology and risk culture) which can significantly impact the levels and types of risks the Company might face in its pursuit to strategically optimize risk taking and risk management. Our ERM Framework incorporates relevant impacts and mitigating actions as appropriate.

A strong risk culture and a common approach to risk management are integral to Manulife's risk management practices. Management is responsible for managing risk within risk appetite and has established risk management strategies and monitoring practices. This includes a "three lines of defence" governance model that segregates duties between risk taking activities, risk monitoring and risk oversight, and establishes appropriate accountability for those who assume risk versus those who oversee risk.

The Company's first line of defence includes the Chief Executive Officer ("CEO"), Divisional General Managers and Global Function Heads. In our matrix reporting model, the Divisional General Managers are accountable for their business results, the risks they assume to achieve those results, and for the day-to-day management of the risks and related controls and the Global Function Heads are accountable for the management of the risks and related controls for their function.

The second line of defence is comprised of the Company's Chief Risk Officer ("CRO"), the Global Risk Management ("GRM") function and other global oversight functions. Collectively, this group provides independent oversight of risk taking and risk management activities across the enterprise.

The third line of defence is Internal Audit, which provides independent assurance that controls are effective and appropriate relative to the risk inherent in the business, and that risk mitigation programs and risk oversight functions are effective in managing risks.

Risk Culture

Manulife strives for a risk aware culture, where individuals and groups are encouraged, feel comfortable and are proactive in making transparent, balanced risk-return decisions that are in the long-term interests of the Company. Key areas of focus pertaining to risk culture include: aligning individual and Company objectives; identifying and escalating risks before they become significant issues; promoting a cooperative approach that enables appropriate risk taking; ensuring transparency in identifying, communicating and tracking risks; and systematically acknowledging and surfacing material risks.

Risk Governance

The Board of Directors oversees the Company's culture of integrity and ethics, strategic planning, risk management, and corporate governance, among other things. The Board carries out its responsibilities directly and through its four standing committees. The Board Risk Committee oversees the management of our principal risks, and our programs, policies and procedures to manage those risks. The Board Audit Committee oversees internal control over financial reporting and our finance, actuarial, internal audit and global compliance functions, serves as the conduct review committee, and reviews our compliance with legal and regulatory requirements and also oversees the external auditors. The Management Resources and Compensation Committee oversees our global human resources strategy, policies, programs, management succession, executive compensation, and pension plan governance. The Corporate Governance and Nominating Committee develops our governance policies, practices and procedures, among other things.

The CEO is directly accountable to the Board of Directors for the results and operations of the Company and all risk taking activities and risk management practices required to achieve those results. The CEO is supported by the CRO as well as by the Executive Risk Committee ("ERC"). Together, they shape and promote our risk culture, guide risk taking throughout our global operations and strategically manage our overall risk profile. The ERC, along with other executive-level risk oversight committees, establishes risk policies, guides risk-taking activity, monitors significant risk exposures and sponsors strategic risk management priorities throughout the organization.

GRM, under the direction of the CRO, establishes and maintains our enterprise risk management framework and oversees the execution of individual risk management programs across the enterprise. GRM seeks to ensure a consistent enterprise-wide assessment of risk, risk-based capital and risk-adjusted returns across all operations.

The ERC approves and oversees the execution of the Company's enterprise risk management program. It establishes and presents for approval to the Board the Company's risk appetite and enterprise-wide risk limits and monitors our overall risk profile, including key and emerging risks and risk management activities. As part of these activities, the ERC monitors material risk exposures, endorses and reviews strategic risk management priorities, and reviews and assesses the impact of business strategies, opportunities and initiatives on our overall risk position. The ERC is supported by a number of oversight sub-committees including: Credit Committee, Product Oversight Committee, Global Asset Liability Committee, and the Operational Risk Committee. We also have divisional risk committees as well as a global Wealth and Asset Management Risk Committee, each with mandates similar to the ERC except with a focus at the divisional and global WAM business line levels, as applicable.

Risk Appetite

Risk taking activities are managed within the Company's overall risk appetite, which defines the amount and types of risks the Company is willing to assume in pursuit of its objectives. It is comprised of three components: risk philosophy, risk appetite statements, and risk limits and tolerances.

When making decisions about risk taking and risk management, Manulife places priority on the following risk management objectives:

- To safeguard the commitments and expectations we have established with customers, shareholders and creditors;
- To support the successful design and delivery of customer solutions;
- To prudently and effectively deploy the capital invested in the Company by our shareholders with appropriate risk/return profiles; and
- To protect and/or enhance the Company's reputation and brand.

At least annually, the Company establishes and/or reaffirms its risk appetite to ensure that risk appetite and the Company's strategy align. The risk appetite statements provide 'guideposts' on our appetite for identified risks, any conditions placed on associated risk taking and direction for where quantitative risk limits should be established. The Company's risk appetite statements are as follows:

- Manulife accepts a total level of risk that provides a very high level of confidence to meeting customer obligations while targeting an appropriate overall return to shareholders over time;
- The Company targets a credit rating amongst the strongest of its global peers;
- Manulife values innovation and encourages initiatives intended to strengthen the customers' experience and enhance competitive advantage;
- Capital market risks are acceptable when they are managed within specific risk limits and tolerances;
- The Company believes a balanced investment portfolio reduces overall risk and enhances returns; therefore, it accepts credit and ALDA-related risks;
- The Company pursues insurance risks that add customer and shareholder value where there is competence to assess and monitor them, and for which appropriate compensation is received;
- Manulife accepts that operational risks are an inherent part of the business but will protect its business and customers' assets through cost-effective operational risk mitigation; and

- Manulife expects its officers and employees to act in accordance with the Company's values, ethics and standards and to enhance its brand and reputation.

Risk limits and tolerances are established for risks within our risk classification framework that are inherent in our strategies in order to define the types and amount of risk the Company will assume. Risk tolerance levels are set for risks deemed to be most significant to the Company and are established in relation to economic capital, earnings-at-risk and regulatory capital required. The purpose of risk limits is to cascade the total Company risk appetite to a level that can be effectively managed. Manulife establishes standalone risk limits for risk categories to avoid excessive concentration in any individual risk category and to manage the overall risk profile of the organization.

Risk Identification, Measurement and Assessment

We have a common approach and process to identify, measure, and assess the risks we assume. We evaluate all potential new business initiatives, acquisitions, product offerings, reinsurance arrangements, and investment and financing transactions on a comparable risk-adjusted basis. Divisions and functional groups are responsible for identifying and assessing key and emerging risks on an ongoing basis. A standard inventory of risks is used in all aspects of risk identification, measurement and assessment, and monitoring and reporting.

Risk exposures are evaluated using a variety of risk measures focused on both short-term net income attributed to shareholders and long-term economic value, with certain measures used across all risk categories, while others apply only to some risks or a single risk type. Measures include stress tests such as sensitivity tests, scenario impact analyses and stochastic scenario modeling. In addition, qualitative risk assessments are performed, including for those risk types that cannot be reliably quantified.

We perform a variety of stress tests on earnings, regulatory capital ratios, economic capital, earnings-at-risk and liquidity that consider significant, but plausible events. We also perform other integrated, complex scenario tests to assess key risks and the interaction of these risks.

Economic capital and earnings-at-risk provide measures of enterprise-wide risk that can be aggregated and compared across business activities and risk types. Economic capital measures the amount of capital required to meet obligations with a high and pre-defined confidence level. Our earnings-at-risk metric measures the potential variance from quarterly expected earnings at a particular confidence level. Economic capital and earnings-at-risk are both determined using internal models.

Risk Monitoring and Reporting

Under the direction of the CRO, GRM oversees a formal process for monitoring and reporting on all significant risks at the Company-wide level. Risk exposures are also discussed at various risk oversight committees, along with any exceptions or proposed remedial actions, as required.

On at least a quarterly basis, management and the Board of Directors review risk reports that present an overview of our overall risk profile and exposures across our principal risks. The reports incorporate both quantitative risk exposure measures and sensitivities, and qualitative risk assessments. The reports also highlight key risk management activities and facilitate monitoring compliance with key risk policy limits.

Our Chief Actuary presents the results of the Dynamic Capital Adequacy Test to the Board of Directors annually. Our Chief Auditor reports the results of internal audits of risk controls and risk management programs to the Audit Committee semi-annually. Management reviews the implementation of key risk management strategies, and their effectiveness, with the Board Risk Committee annually.

Risk Control and Mitigation

Risk control activities are in place throughout the Company to seek to mitigate risks within established risk limits. We believe our controls, which include policies, procedures, systems and processes, are appropriate and commensurate with the key risks faced at all levels across the Company. Such controls are an integral part of day-to-day activity, business management and decision making.

GRM establishes and oversees formal review and approval processes, involving independent individuals, groups or risk oversight committees, for product offerings, insurance underwriting, reinsurance, investment activities and other material business activities, based on the nature, size and complexity of the risk taking activity involved. Authorities for assuming risk at the transaction level are delegated to specific individuals based on their skill, knowledge and experience.

Emerging Risk

The identification and assessment of our external environment for emerging risks is an important aspect of our enterprise risk management framework, as these risks, although yet to materialize, could have the potential to have a material impact on our operations.

Our Emerging Risk Framework facilitates the ongoing identification, assessment and monitoring of emerging risks, and includes: maintaining a process that facilitates the ongoing discussion and evaluation of potential emerging risks with senior management and other functions; reviewing and validating emerging risks with the ERC; creating and executing on responses to each emerging risk based on prioritization; and monitoring and reporting on emerging risks on a regular basis.

Regulatory Updates

The Office of the Superintendent of Financial Institutions ("OSFI") will be implementing a revised approach to the regulatory capital framework in Canada to come into effect in 2018. In September 2016, OSFI released the final Life Insurance Capital Adequacy Test ("LICAT") guideline that will replace the MCCSR framework in 2018. During 2017, the industry will be completing impact assessments of the guideline, including sensitivity testing. Based on industry information and analysis, OSFI may amend the guideline to reflect appropriate calibration adjustments.

With respect to the impact of LICAT, OSFI has noted that the: [1]

- Overall level of excess capital in the industry under LICAT vs. MCCSR is not expected to change significantly;
- LICAT ratios and MCCSR ratios are not directly comparable; and
- Impact on individual life insurers will depend on what businesses they are engaged in, risks that they choose to take on and how these risks are managed.

We expect to continue to be in a strong capital position under the new framework. [2]

General Macro-Economic Risk Factors

The global macro-economic environment has a significant impact on our financial plans and ability to implement our business strategy. The macro-economic environment can be significantly impacted by the actions of both the government sector (including central banks) and the private sector. The macro-economic environment may also be affected by natural and man-made catastrophes.

Our business strategy and associated financial plans are developed by considering forecasts of economic growth, both globally and in the specific countries we operate. Actual economic growth can be significantly impacted by the macro-economic environment and can deviate significantly from forecast, thus impacting our financial results and the ability to implement our business strategy.

Changes in the macro-economic environment can also have a significant impact on financial markets, including movements in interest rates, spreads on fixed income assets and returns on public equity and ALDA assets. Our financial plan, including income projections, capital projections, and valuation of liabilities are based on certain assumptions with respect to future movements in interest rates and spreads on fixed income assets, and expected future returns from our public equity and ALDA investments. Actual experience is highly variable and can deviate significantly from our assumptions, thus impacting our financial results. In addition, actual experience that is significantly different from our assumptions and/or changes in the macro-economic environment may result in changes to the assumptions themselves which would also impact our financial results.

Specific changes in the macro-economic environment can have very different impacts across different parts of the business. For example, a rise in interest rates is generally beneficial to us in the long-term but can adversely affect valuations of some ALDA assets, especially those that have contractual cash flows.

The spending and savings patterns of our customers could be significantly influenced by the macro-economic environment and could have an impact on the products and services we offer to our customers.

Customer behaviour and emergence of claims on our liabilities can be significantly impacted by the macro-economic environment. For example, a prolonged period of economic weakness could impact the health and well-being of our customers and that could result in increased claims for certain insurance risks.

The following sections describe the risk management strategies for each of our six principal risk categories: strategic risk, market risk, liquidity risk, credit risk, insurance risk and operational risk.

Strategic Risk

Strategic risk is the risk of loss resulting from the inability to adequately plan or implement an appropriate business strategy, or to adapt to change in the external business, political or regulatory environment.

Risk Management Strategy

The CEO and Executive Committee establish and oversee execution of business strategies and have accountability to identify and manage the risks embedded in these strategies. They are supported by a number of processes:

- Strategic business, risk and capital planning that is reviewed with the Board of Directors, Executive Committee, and the ERC;
- Performance and risk reviews of all key businesses with the CEO and annual reviews with the Board of Directors;
- Risk-based capital attribution and allocation designed to encourage a consistent decision-making framework across the organization; and
- Review and approval of acquisitions and divestitures by the CEO and, where appropriate, the Board of Directors.

The CEO and Executive Committee are ultimately responsible for our reputation; however, our employees and representatives are responsible for conducting their business activities in a manner that upholds our reputation. This responsibility is executed through an

[1] Slides 21 and 22, OSFI LICAT Webcast Information Session held on September 15, 2016.
[2] See "Caution regarding forward-looking statements" above.

enterprise-wide reputation risk policy that specifies the oversight responsibilities of the Board of Directors and the responsibilities of executive management, communication to and education of all directors, officers, employees and representatives, including our Code of Business Conduct and Ethics, and application of guiding principles in conducting all our business activities.

IFRS 7 Disclosures

The shaded text and tables in the following sections of this MD&A represent our disclosure on market and liquidity risk in accordance with IFRS 7, "Financial Instruments – Disclosures," and include a discussion on how we measure risk and our objectives, policies and methodologies for managing these risks. Therefore, the following shaded text and tables represent an integral part of our audited annual Consolidated Financial Statements for the years ended December 31, 2016 and December 31, 2015. The fact that certain text and tables are considered an integral part of the Consolidated Financial Statements does not imply that the disclosures are of any greater importance than the sections not part of the disclosure. Accordingly, the "Risk Management" disclosure should be read in its entirety.

Market Risk

Market risk is the risk of loss resulting from market price volatility, interest rate change, credit and swap spread changes, and from adverse foreign currency rate movements. Market price volatility primarily relates to changes in prices of publicly traded equities and alternative long-duration assets.

Market Risk Management Strategy

Market risk is governed by the Global Asset Liability Committee which oversees the overall market and liquidity risk program. Our overall strategy to manage our market risks incorporates several component strategies, each targeted to manage one or more of the market risks arising from our businesses. At an enterprise level, these strategies are designed to manage our aggregate exposures to market risks against economic capital, regulatory required capital and earnings-at-risk limits.

The following table outlines our key market risks and identifies the risk management strategies which contribute to managing these risks.

Risk Management Strategy	Key Market Risk			
	Publicly Traded Equity Performance Risk	Interest Rate and Spread Risk	Alternative Long-Duration Asset Performance Risk	Foreign Exchange Risk
Product design and pricing	X	X	X	X
Variable annuity guarantee dynamic hedging	X	X		X
Macro equity risk hedging	X			X
Asset liability management	X	X	X	X
Foreign exchange management				X

To reduce publicly traded equity performance risk, we primarily use a variable annuity guarantee dynamic hedging strategy which is complemented by a general macro equity risk hedging strategy. Our strategies employed for variable annuity guarantee dynamic hedging and macro equity risk hedging expose the Company to additional risks. See "Risk Factors" below.

In general, to seek to reduce interest rate risk, we lengthen the duration of our fixed income investments in our liability and surplus segments by executing lengthening interest rate swaps.

Our foreign exchange risk management strategy is designed to hedge the sensitivity of our regulatory capital ratios to movements in foreign exchange rates. Our policy is to generally match the currency of our assets with the currency of the liabilities they support, and similarly, to generally match the currency of the assets in our shareholders' equity account to the currency of our required capital. Where assets and liabilities are not matched, we seek to stabilize our capital ratios through the use of financial instruments such as derivatives.

Product Design and Pricing Strategy

Our policies, standards and standards of practice with respect to product design and pricing are designed with the objective of aligning our product offerings with our risk-taking philosophy and risk appetite, and in particular, that incremental risk generated from new sales aligns with our strategic risk objectives and risk limits. The specific design features of our product offerings, including level of benefit guarantees, policyholder options, fund offerings and availability restrictions as well as our associated investment strategies, help to mitigate the level of underlying risk. We regularly review and modify key features within our product offerings, including premiums and fee charges with a goal of meeting profit targets and staying within risk limits. Certain of our general fund adjustable benefit products have minimum rate guarantees. The rate guarantees for any particular policy are set at the time the policy is issued and governed by insurance regulation in each jurisdiction where the products are sold. The contractual provisions allow crediting rates to be re-set at pre-established intervals subject to the established minimum crediting rate guarantees. The Company may partially mitigate the interest rate exposure by setting new rates on new business and by adjusting rates on in-force business where permitted. In addition, the Company partially mitigates this interest rate risk through its asset liability management process, product design elements, and crediting rate strategies. New product initiatives, new reinsurance arrangements and material insurance underwriting initiatives must be reviewed and approved by the CRO or key individuals within risk management functions.

Hedging Strategies for Variable Annuity and Other Equity Risks

The Company's exposure to movement in public equity market values primarily arises from variable annuity guarantees and to a smaller extent from asset-based fees and general fund public equity holdings.

Dynamic hedging is the primary hedging strategy for variable annuity market risks. Dynamic hedging is employed for new variable annuity guarantees business when written or as soon as practical thereafter.

We seek to manage public equity risk arising from other sources (not dynamically hedged) through our macro equity risk hedging strategy. We seek to manage interest rate risk arising from variable annuity business not dynamically hedged within our asset liability management strategy.

Variable Annuity Dynamic Hedging Strategy

The variable annuity dynamic hedging strategy is designed to hedge the sensitivity of variable annuity guarantee policy liabilities and available capital to fund performance (both public equity and bond funds) and interest rate movements. The objective of the variable annuity dynamic hedging strategy is to offset, as closely as possible, the change in the economic value of guarantees with the profit and loss from our hedge asset portfolio. The economic value of guarantees moves in close tandem, but not exactly, with our variable annuity guarantee policy liabilities, as it reflects best estimate liabilities and does not include any liability provisions for adverse deviations.

Our current variable annuity guarantee dynamic hedging approach is to short exchange-traded equity index and government bond futures and execute currency futures and lengthening interest rate swaps to hedge sensitivity of policy liabilities to fund performance and interest rate movements arising from variable annuity guarantees. We dynamically rebalance these hedge instruments as market conditions change, in order to maintain the hedged position within established limits. Other derivative instruments (such as equity and interest rate options) are also utilized and we may consider the use of additional hedge instruments opportunistically in the future.

Our variable annuity guarantee dynamic hedging strategy is not designed to completely offset the sensitivity of policy liabilities to all risks associated with the guarantees embedded in these products. The profit (loss) on the hedge instruments will not completely offset the underlying losses (gains) related to the guarantee liabilities hedged because:

- Policyholder behaviour and mortality experience are not hedged;
- Provisions for adverse deviation in the policy liabilities are not hedged;
- A portion of interest rate risk is not hedged;
- Credit spreads widen and actions are not taken to adjust accordingly;
- Fund performance on a small portion of the underlying funds is not hedged due to lack of availability of effective exchange-traded hedge instruments;
- Performance of the underlying funds hedged may differ from the performance of the corresponding hedge instruments;
- Correlations between interest rates and equity markets could lead to unfavourable material impacts;
- Unfavourable hedge rebalancing costs can be incurred during periods of high volatility from equity markets, bond markets and/or interest rates. The impact is magnified when these impacts occur concurrently; and
- Not all other risks are hedged.

Macro Equity Risk Hedging Strategy

The objective of the macro equity risk hedging program is to maintain our overall earnings sensitivity to public equity market movements within our Board approved risk appetite limits. The macro equity risk hedging program is designed to hedge earnings sensitivity due to movements in public equity markets arising from all sources (outside of dynamically hedged exposures). Sources of equity market sensitivity addressed by the macro equity risk hedging program include:

- Residual equity and currency exposure from variable annuity guarantees not dynamically hedged;
- General fund equity holdings backing non-participating liabilities;
- Variable life insurance;
- Unhedged provisions for adverse deviation related to variable annuity guarantees dynamically hedged; and
- Variable annuity fees not associated with guarantees and fees on segregated funds without guarantees, mutual funds and institutional assets managed.

Asset Liability Management Strategy

Our asset liability management strategy is designed to help ensure that the market risks embedded in our assets and liabilities held in the Company's general fund are effectively managed and that risk exposures arising from these assets and liabilities are maintained below targeted levels. The embedded market risks include risks related to the level and movement of interest rates and credit spreads, public equity market performance, ALDA performance and foreign exchange rate movements.

General fund product liabilities are segmented into groups with similar characteristics that are supported by specific asset segments. We seek to manage each segment to a target investment strategy appropriate for the premium and benefit pattern, policyholder options and guarantees, and crediting rate strategies of the products they support. Similar strategies are established for assets in the Company's surplus account. The strategies are set using portfolio analysis techniques intended to optimize returns, subject to considerations related to regulatory and economic capital requirements, and risk tolerances. They are designed to achieve broad diversification across asset classes and individual investment risks while being suitably aligned with the liabilities they support. The strategies encompass asset mix, quality rating, term profile, liquidity, currency, and industry concentration targets.

Products which feature guaranteed liability cash flows (i.e. where the projected net flows are not materially dependent upon economic scenarios) are managed to a target return investment strategy. The products backed by this asset segment include:

- Accumulation annuities (other than annuities with pass-through features), which are primarily short-to-medium-term obligations and offer interest rate guarantees for specified terms on single premiums. Withdrawals may or may not have market value adjustments.
- Payout annuities, which have no surrender options and include predictable and very long-dated obligations.
- Insurance products, with recurring premiums extending many years in the future, and which also include a significant component of very long-dated obligations.

We seek to manage the assets backing these long-dated benefits to achieve a target return sufficient to support the obligations over their lifetime, subject to established risk tolerances, by investing in a basket of diversified ALDA with the balance invested in fixed income. Utilizing ALDA to partially support these products is intended to enhance long-term investment returns and reduce aggregate risk through diversification. The size of the target ALDA portfolio is dependent upon the size and term of each segment's liability obligations. We seek to manage fixed income assets to a benchmark developed to minimize interest rate risk against the residual liabilities and to achieve target returns/spreads required to preserve long-term interest rate investment assumptions used in liability pricing.

For insurance and annuity products where significant pass-through features exist, a total return strategy approach is used, generally combining fixed income and ALDA. ALDA may be included to enhance long-term investment returns and reduce aggregate risk through diversification. Target investment strategies are established using portfolio analysis techniques that seek to optimize long-term investment returns while considering the risks related to embedded product guarantees and policyholder withdrawal options, the impact of regulatory and economic capital requirements and management tolerances with respect to short-term income volatility and long-term tail risk exposure. Shorter duration liabilities such as fixed deferred annuities generally do not incorporate ALDA in their target asset mixes.

In our general fund, we seek to limit concentration risk associated with ALDA performance by investing in a diversified basket of assets including public and private equities, commercial real estate, infrastructure, timber, farmland real estate, and oil and gas assets. We further diversify risk by managing publicly traded equities and ALDA investments against established limits, including for industry type and corporate connection, commercial real estate type and geography, and timber and farmland property geography and crop type.

Authority to manage our investment portfolios is delegated to investment professionals who manage to benchmarks derived from the target investment strategies established for each segment, including interest rate risk tolerances. Interest rate risk exposure measures are monitored and communicated to portfolio managers with frequencies ranging from daily to annually, depending on the type of liability. Asset portfolio rebalancing, accomplished using cash investments or derivatives, may occur at frequencies ranging from daily to monthly, depending on our established risk tolerances and the potential for changes in the profile of the assets and liabilities.

Our asset liability management strategy incorporates a wide variety of risk measurement, risk mitigation and risk management, and hedging processes. The liabilities and risks to which the Company is exposed, however, cannot be completely matched or hedged due to both limitations on instruments available in investment markets and uncertainty of impact on liability cash flows from policyholder experience/behaviour.

Foreign Exchange Risk Management Strategy

Our foreign exchange risk management strategy is designed to hedge the sensitivity of our regulatory capital ratios to movements in foreign exchange rates. In particular, the objective of the strategy is to offset within acceptable tolerance levels, changes in required capital with changes in available capital that result from currency movements. These changes occur when assets and liabilities related to business conducted in currencies other than Canadian dollars are translated to Canadian dollars at period ending exchange rates.

Our policy is to generally match the currency of our assets with the currency of the liabilities they support, and similarly, to generally match the currency of the assets in our shareholders' equity account to the currency of our required capital. Where assets and liabilities are not matched, we would seek to stabilize our capital ratios through the use of forward contracts and currency swaps.

Risk exposure limits are measured in terms of potential changes in capital ratios due to foreign exchange rate movements, determined to represent a specified likelihood of occurrence based on internal models.

Market Risk Sensitivities and Market Risk Exposure Measures

Variable Annuity and Segregated Fund Guarantees Sensitivities and Risk Exposure Measures

Guarantees on variable annuity products and segregated funds may include one or more of death, maturity, income and withdrawal guarantees. Variable annuity and segregated fund guarantees are contingent and only payable upon the occurrence of the relevant event, if fund values at that time are below guaranteed values. Depending on future equity market levels, liabilities on current in-force business would be due primarily in the period from 2017 to 2038.

We seek to mitigate a portion of the risks embedded in our retained (i.e. net of reinsurance) variable annuity and segregated fund guarantee business through the combination of our dynamic and macro hedging strategies (see "Publicly Traded Equity Performance Risk" below).

The table below shows selected information regarding the Company's variable annuity and segregated fund investment-related guarantees gross and net of reinsurance.

Variable annuity and segregated fund guarantees, net of reinsurance

As at December 31,	2016			2015		
($ millions)	Guarantee value	Fund value	Amount at risk[4], [5]	Guarantee value	Fund value	Amount at risk[4], [5]
Guaranteed minimum income benefit[1]	**$ 5,987**	**$ 4,432**	**$ 1,570**	$ 6,642	$ 4,909	$ 1,740
Guaranteed minimum withdrawal benefit	**68,594**	**59,593**	**9,135**	73,232	65,090	9,231
Guaranteed minimum accumulation benefit	**19,482**	**19,989**	**27**	19,608	23,231	72
Gross living benefits[2]	**94,063**	**84,014**	**10,732**	99,482	93,230	11,043
Gross death benefits[3]	**12,200**	**16,614**	**1,350**	13,693	13,158	1,704
Total gross of reinsurance	**106,263**	**100,628**	**12,082**	113,175	106,388	12,747
Living benefits reinsured	**5,241**	**3,903**	**1,349**	5,795	4,312	1,486
Death benefits reinsured	**3,429**	**3,202**	**564**	3,874	3,501	682
Total reinsured	**8,670**	**7,105**	**1,913**	9,669	7,813	2,168
Total, net of reinsurance	**$ 97,593**	**$ 93,523**	**$ 10,169**	$ 103,506	$ 98,575	$ 10,579

(1) Contracts with guaranteed long-term care benefits are included in this category.
(2) Where a policy includes both living and death benefits, the guarantee in excess of the living benefit is included in the death benefit category.
(3) Death benefits include stand-alone guarantees and guarantees in excess of living benefit guarantees where both death and living benefits are provided on a policy.
(4) Amount at risk (in-the-money amount) is the excess of guarantee values over fund values on all policies where the guarantee value exceeds the fund value. This amount is not currently payable. For guaranteed minimum death benefit, the amount at risk is defined as the current guaranteed minimum death benefit in excess of the current account balance. For guaranteed minimum income benefit, the amount at risk is defined as the excess of the current annuitization income base over the current account value. For all guarantees, the amount at risk is floored at zero at the single contract level.
(5) The amount at risk net of reinsurance at December 31, 2016 was $10,169 million (2015 – $10,579 million) of which: US$6,008 million (2015 – US$6,046 million) was on our U.S. business, $1,499 million (2015 – $1,564 million) was on our Canadian business, US$206 million (2015 – US$190 million) was on our Japan business and US$244 million (2015 – US$277 million) was related to Asia (other than Japan) and our run-off reinsurance business.

The policy liabilities established for variable annuity and segregated fund guarantees were $6,249 million at December 31, 2016 (2015 – $7,469 million). This included policy liabilities of $828 million (2015 – $840 million) for non-dynamically hedged business and $5,421 million (2015 – $6,629 million) for dynamically hedged business.

The decrease in the total policy liabilities for variable annuity and segregated fund guarantees since December 31, 2015 is primarily due to the annual review of actuarial methods and assumptions (see “Critical Accounting and Actuarial Policies” below) and favourable equity markets in the U.S. and Canada.

Investment categories for variable contracts with guarantees

Variable contracts with guarantees are invested, at the policyholder’s discretion subject to contract limitations, in various fund types within the segregated fund accounts and other investments. The account balances by investment category are set out below.

As at December 31, ($ millions) **Investment category**	**2016**	2015
Equity funds	**$ 41,805**	$ 42,915
Balanced funds	**57,571**	61,657
Bond funds	**11,585**	11,750
Money market funds	**2,127**	2,304
Other fixed interest rate investments	**1,800**	2,216
Total	**$ 114,888**	$ 120,842

Caution Related to Sensitivities

In the sections that follow, we provide sensitivities and risk exposure measures for certain risks. These include sensitivities due to specific changes in market prices and interest rate levels projected using internal models as at a specific date, and are measured relative to a starting level reflecting the Company’s assets and liabilities at that date and the actuarial factors, investment activity and investment returns assumed in the determination of policy liabilities. The risk exposures measure the impact of changing one factor at a time and assume that all other factors remain unchanged. Actual results can differ significantly from these estimates for a variety of reasons including the interaction among these factors when more than one changes; changes in actuarial and investment return and future investment activity assumptions; actual experience differing from the assumptions, changes in business mix, effective tax rates and other market factors; and the general limitations of our 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 below. Given the nature of these calculations, we cannot provide assurance that the actual impact on net income attributed to shareholders

or on MLI’s MCCSR ratio will be as indicated.

Publicly Traded Equity Performance Risk Sensitivities and Exposure Measures

As outlined above, the macro hedging strategy is designed to mitigate public equity risk arising from variable annuity guarantees not dynamically hedged and from other products and fees. In addition, our variable annuity guarantee dynamic hedging strategy is not designed to completely offset the sensitivity of policy liabilities to all risks associated with the guarantees embedded in these products.

The table below shows the potential impact on net income attributed to shareholders resulting from an immediate 10, 20 and 30% change in market values of publicly traded equities followed by a return to the expected level of growth assumed in the valuation of policy liabilities. If market values were to remain flat for an entire year, the potential impact would be roughly equivalent to an immediate decline in market values equal to the expected level of annual growth assumed in the valuation of policy liabilities. Further, if after market values dropped 10, 20 or 30% they continued to decline, remained flat, or grew more slowly than assumed in the valuation the potential impact on net income attributed to shareholders could be considerably more than shown. Refer to “Sensitivity of Earnings to Changes in Assumptions” for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions. The potential impact is shown after taking into account the impact of the change in markets on the hedge assets. While we cannot reliably estimate the amount of the change in dynamically hedged variable annuity guarantee liabilities that will not be offset by the profit or loss on the dynamic hedge assets, we make certain assumptions for the purposes of estimating the impact on net income attributable to shareholders.

This estimate assumes that the performance of the dynamic hedging program would not completely offset the gain/loss from the dynamically hedged variable annuity guarantee liabilities. It assumes that the hedge assets are based on the actual position at the period end, and that equity hedges in the dynamic program are rebalanced at 5% intervals. In addition, we assume that the macro hedge assets are rebalanced in line with market changes.

It is also important to note that these estimates are illustrative, and that the hedging program may underperform these estimates, particularly during periods of high realized volatility and/or periods where both interest rates and equity market movements are unfavourable.

The Standards of Practice for the valuation of insurance contract liabilities and guidance published by the CIA constrain the investment return assumptions for public equities and certain ALDA assets based on historical return benchmarks for public equities. The potential impact on net income attributed to shareholders does not take into account possible changes to investment return assumptions resulting from the impact of declines in public equity market values on these historical return benchmarks.

Potential immediate impact on net income attributed to shareholders arising from changes to public equity returns [1],[2],[3]

As at December 31, 2016 ($ millions)	-30%	-20%	-10%	10%	20%	30%
Underlying sensitivity to net income attributed to shareholders [4]						
Variable annuity guarantees	**$ (4,830)**	**$ (2,920)**	**$ (1,290)**	**$ 1,000**	**$ 1,690**	**$ 2,170**
Asset based fees	**(410)**	**(280)**	**(140)**	**140**	**280**	**410**
General fund equity investments [5]	**(910)**	**(590)**	**(270)**	**240**	**490**	**750**
Total underlying sensitivity before hedging	**(6,150)**	**(3,790)**	**(1,700)**	**1,380**	**2,460**	**3,330**
Impact of macro and dynamic hedge assets [6]	**4,050**	**2,440**	**1,060**	**(910)**	**(1,610)**	**(2,160)**
Net potential impact on net income after impact of hedging	**$ (2,100)**	**$ (1,350)**	**$ (640)**	**$ 470**	**$ 850**	**$ 1,170**

As at December 31, 2015 ($ millions)	-30%	-20%	-10%	10%	20%	30%
Underlying sensitivity to net income attributed to shareholders [4]						
Variable annuity guarantees	$ (5,180)	$ (3,140)	$ (1,410)	$ 1,080	$ 1,860	$ 2,420
Asset based fees	(470)	(310)	(160)	160	310	470
General fund equity investments [5]	(1,030)	(680)	(340)	330	670	1,020
Total underlying sensitivity before hedging	(6,680)	(4,130)	(1,910)	1,570	2,840	3,910
Impact of macro and dynamic hedge assets [6]	4,750	2,920	1,360	(1,240)	(2,250)	(3,090)
Net potential impact on net income after impact of hedging	$ (1,930)	$ (1,210)	$ (550)	$ 330	$ 590	$ 820

(1) See "Caution Related to Sensitivities" above.
(2) The tables above show the potential impact on net income attributed to shareholders resulting from an immediate 10, 20 and 30% change in market values of publicly traded equities followed by a return to the expected level of growth assumed in the valuation of policy liabilities.
(3) Please refer to "Sensitivity of Earnings to Changes in Assumptions" for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions.
(4) Defined as earnings sensitivity to a change in public equity markets including settlements on reinsurance contracts, but before the offset of hedge assets or other risk mitigants.
(5) This impact for general fund equities is calculated as at a point-in-time and does not include: (i) any potential impact on public equity weightings; (ii) any gains or losses on AFS public equities held in the Corporate and Other segment; or (iii) any gains or losses on public equity investments held in Manulife Bank. The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in equity markets.
(6) Includes the impact of rebalancing equity hedges in the macro and dynamic hedging program. The impact of dynamic hedge rebalancing represents the impact of rebalancing equity hedges for dynamically hedged variable annuity guarantee best estimate liabilities at 5% intervals, but does not include any impact in respect of other sources of hedge ineffectiveness e.g. fund tracking, realized volatility and equity, interest rate correlations different from expected among other factors.

Changes in equity markets impact our available and required components of the MCCSR ratio. The following table shows the potential impact to MLI's MCCSR ratio resulting from changes in public equity market values, assuming that the change in the value of the hedge assets does not completely offset the change of the related variable annuity guarantee liabilities.

Potential immediate impact on MLI's MCCSR ratio arising from public equity returns different than the expected return for policy liability valuation [1],[2],[3]

	Impact on MLI's MCCSR ratio					
Percentage points	-30%	-20%	-10%	10%	20%	30%
December 31, 2016	**(12)**	**(8)**	**(4)**	**3**	**14**	**18**
December 31, 2015	(14)	(7)	(4)	1	3	7

(1) See "Caution Related to Sensitivities" above. In addition, estimates exclude changes to the net actuarial gains/losses with respect to the Company's pension obligations as a result of changes in equity markets, as the impact on the quoted sensitivities is not considered to be material.
(2) The potential impact is shown assuming that the change in value of the hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities. The estimated amount that would not be completely offset relates to our practices of not hedging the provisions for adverse deviation and of rebalancing equity hedges for dynamically hedged variable annuity liabilities at 5% intervals.
(3) OSFI rules for segregated fund guarantees reflect full capital impacts of shocks over 20 quarters within a prescribed range. As such, the deterioration in equity markets could lead to further increases in capital requirements after the initial shock.

Interest Rate and Spread Risk Sensitivities and Exposure Measures

At December 31, 2016, we estimated the sensitivity of our net income attributed to shareholders to a 50 basis point parallel change in interest rates to be minimal.

The table below shows the potential impact on net income attributed to shareholders from a 50 basis point parallel move in interest rates. This includes a change of 50 basis points in current government, swap and corporate rates for all maturities across all markets with no change in credit spreads between government, swap and corporate rates, and with a floor of zero on government rates where government rates are not currently negative, relative to the rates assumed in the valuation of policy liabilities, including embedded derivatives. For variable annuity guarantee liabilities that are dynamically hedged, it is assumed that interest rate hedges are rebalanced at 20 basis point intervals.

As the sensitivity to a 50 basis point change in interest rates includes any associated change in the applicable reinvestment scenarios, the impact of changes to interest rates for less than, or more than 50 basis points is unlikely to be linear. Furthermore, our sensitivities are not consistent across all regions in which we operate, and the impact of yield curve changes will vary depending upon the geography that the change occurs in. Reinvestment assumptions used in the valuation of policy liabilities tend to amplify the negative effects of a decrease in interest rates, and dampen the positive effects of interest rate increases. This is because the reinvestment assumptions used in the valuation of our insurance liabilities are based on interest rate scenarios and calibration criteria set by the Actuarial Standards Board, while our interest rate hedges are valued using current market interest rates. Therefore, in any particular quarter, changes to the reinvestment assumptions are not fully aligned to changes in current market interest rates especially when there is a significant change in the shape of the interest rate curve. As a result, the impact from non-parallel movements may be materially different from the estimated impact of parallel movements. For example, if long-term interest rates increase more than short-term interest rates (sometimes referred to as a steepening of the yield curve) in North America, the decrease in the value of our swaps may be greater than the decrease in the value of our insurance liabilities. This could result in a charge to net income attributed to shareholders in the short-term even though the rising and steepening, if sustained, may have a positive long-term economic impact.

The potential impact on net income attributed to shareholders does not take into account any future potential changes to our URR assumptions or calibration criteria for stochastic risk-free rates or other potential impacts of lower interest rate levels, for example, increased strain on the sale of new business or lower interest earned on our surplus assets. The impact also does not reflect any unrealized gains or losses on AFS fixed income assets held in our surplus segment. Changes in the market value of these assets may provide a natural economic offset to the interest rate risk arising from our product liabilities. In order for there to also be an accounting offset, the Company would need to realize a portion of the AFS fixed income asset unrealized gains or losses. It is not certain we would crystallize any of the unrealized gains or losses available. As at December 31, 2016, the AFS fixed income assets held in the surplus segment were in a net after-tax unrealized loss position of $683 million.

The impact does not reflect any potential effect of changing interest rates to the value of our ALDA assets. Rising interest rates could negatively impact the value of our ALDA assets (see “Critical Accounting and Actuarial Policies – Fair Value of Invested Assets”, below). More information on ALDA can be found under the section “Alternative Long-Duration Asset Performance Risk Sensitivities and Exposure Measures”.

The following table shows the potential impact on net income attributed to shareholders including the change in the market value of fixed income assets held in our surplus segment, which could be realized through the sale of these assets.

Potential impact on net income attributed to shareholders and MLI’s MCCSR ratio of an immediate parallel change in interest rates relative to rates assumed in the valuation of policy liabilities[1],[2],[3],[4],[5]

	2016		2015	
As at December 31,	-50bp	+50bp	-50bp	+50bp
Net income attributed to shareholders ($ millions)				
Excluding change in market value of AFS fixed income assets held in the surplus segment	**$ –**	**$ –**	$ (100)	$ 100
From fair value changes in AFS fixed income assets held in surplus, if realized	**1,000**	**(900)**	600	(600)
MLI’s MCCSR ratio (Percentage points)				
Before impact of change in market value of AFS fixed income assets held in the surplus segment[5]	**(6)**	**5**	(6)	4
From fair value changes in AFS fixed income assets held in surplus, if realized	**1**	**(4)**	3	(3)

(1) See “Caution Related to Sensitivities” above. In addition, estimates exclude changes to the net actuarial gains/losses with respect to the Company’s pension obligations as a result of changes in interest rates, as the impact on the quoted sensitivities is not considered to be material.

(2) Includes guaranteed insurance and annuity products, including variable annuity contracts as well as adjustable benefit products where benefits are generally adjusted as interest rates and investment returns change, a portion of which have minimum credited rate guarantees. For adjustable benefit products subject to minimum rate guarantees, the sensitivities are based on the assumption that credited rates will be floored at the minimum.

(3) The amount of gain or loss that can be realized on AFS fixed income assets held in the surplus segment will depend on the aggregate amount of unrealized gain or loss.

(4) Sensitivities are based on projected asset and liability cash flows at the beginning of the quarter adjusted for the estimated impact of new business, investment markets and asset trading during the quarter. Any true-up to these estimates, as a result of the final asset and liability cash flows to be used in the next quarter’s projection, are reflected in the next quarter’s sensitivities. Impact of realizing fair value changes in AFS fixed income is as of the end of the quarter.

(5) The impact on MLI’s MCCSR ratio includes both the impact of lower earnings on available capital as well as the increase in required capital that results from a decline in interest rates. The potential increase in required capital accounted for 5 of the 6 points impact of a 50 basis point decline in interest rates on MLI’s MCCSR ratio in 4Q16.

The $100 million decrease in sensitivity to a 50 basis point decline in interest rates from December 31, 2015 was primarily due to normal rebalancing as part of our interest risk hedging program, partially offset by updates to our valuation assumptions as a result of our annual review of actuarial methods and assumptions.

The following tables show the potential impact on net income attributed to shareholders resulting from a change in corporate spreads and swap spreads over government bond rates for all maturities across all markets with a floor of zero on the total interest rate, relative to the spreads assumed in the valuation of policy liabilities.

Potential impact on net income attributed to shareholders arising from changes to corporate spreads [(1),(2),(3),(4)]

As at December 31,	2016		2015	
($ millions)	-50bp	+50bp	-50bp	+50bp
Corporate spreads	**$ (800)**	**$ 700**	$ (700)	$ 700

(1) See "Caution Related to Sensitivities" above.
(2) The impact on net income attributed to shareholders assumes no gains or losses are realized on our AFS fixed income assets held in the surplus segment and excludes the impact arising from changes in off-balance sheet bond fund value arising from changes in credit spreads. The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in corporate spreads.
(3) Sensitivities are based on projected asset and liability cash flows at the beginning of the fourth quarter adjusted for the estimated impact of new business, investment markets and asset trading during the quarter. Any true-up to these estimates, as a result of the final asset and liability cash flows to be used in the next quarter's projection, are reflected in the next quarter's sensitivities.
(4) Corporate spreads are assumed to grade to the long-term average over 5 years.

As the sensitivity to a 50 basis point decline in corporate spreads includes the impact of a change in deterministic reinvestment scenarios where applicable, the impact of changes to corporate spreads for less than, or more than, the amounts indicated are unlikely to be linear.

The $100 million increase in sensitivity to a 50 basis point decline in corporate spreads from December 31, 2015 was primarily due to updates to our valuation assumptions as a result of our annual review of actuarial methods and assumptions.

Potential impact on net income attributed to shareholders arising from changes to swap spreads [(1),(2),(3)]

As at December 31,	2016		2015	
($ millions)	-20bp	+20bp	-20bp	+20bp
Swap spreads	**$ 500**	**$ (500)**	$ 500	$ (500)

(1) See "Caution Related to Sensitivities" above.
(2) The impact on net income attributed to shareholders assumes no gains or losses are realized on our AFS fixed income assets held in the surplus segment and excludes the impact arising from changes in off-balance sheet bond fund value arising from changes in credit spreads. The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in swap spreads.
(3) Sensitivities are based on projected asset and liability cash flows at the beginning of the fourth quarter adjusted for the estimated impact of new business, investment markets and asset trading during the quarter. Any true-up to these estimates, as a result of the final asset and liability cash flows to be used in the next quarter's projection, are reflected in the next quarter's sensitivities.

Swap spreads remain at historically low levels, and if they were to rise, this could generate material charges to net income attributed to shareholders. We have reported gains in 2015 and the first three quarters of 2016 totaling almost $1 billion as a result of falling swap spreads during that time. As noted in "Fourth Quarter Financial Highlights" above, we reported a charge of $242 million in 4Q16 when swap rates rose.

Alternative Long-Duration Asset Performance Risk Sensitivities and Exposure Measures

The following table shows the potential impact on net income attributed to shareholders resulting from an immediate 10% change in market values of ALDA followed by a return to the expected level of growth assumed in the valuation of policy liabilities. If market values were to remain flat for an entire year, the potential impact would be roughly equivalent to an immediate decline in market values equal to the expected level of annual growth assumed in the valuation of policy liabilities. Further, if after market values dropped 10% they continued to decline, remained flat, or grew more slowly than assumed in the valuation of policy liabilities, the potential impact on net income attributed to shareholders could be considerably more than shown. Refer to "Sensitivity of Earnings to Changes in Assumptions" for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions.

ALDA includes commercial real estate, timber and farmland real estate, oil and gas direct holdings, and private equities, some of which relate to oil and gas.

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Potential impact on net income attributed to shareholders arising from changes in ALDA returns [1],[2],[3],[4],[5]

As at December 31, ($ millions)	2016 -10%	2016 10%	2015 -10%	2015 10%
Real estate, agriculture and timber assets	**$ (1,300)**	**$ 1,200**	$ (1,200)	$ 1,200
Private equities and other ALDA	**(1,200)**	**1,200**	(1,100)	1,100
Alternative long-duration assets	**$ (2,500)**	**$ 2,400**	$ (2,300)	$ 2,300

(1) See "Caution Related to Sensitivities" above.
(2) This impact is calculated as at a point-in-time impact and does not include: (i) any potential impact on ALDA weightings; (ii) any gains or losses on ALDA held in the Corporate and Other segment; or (iii) any gains or losses on ALDA held in Manulife Bank.
(3) The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in ALDA returns. For some classes of ALDA, where there is not an appropriate long-term benchmark available, the return assumptions used in valuation are not permitted by the Standards of Practice and CIA guidance to result in a lower reserve than an assumption based on a historical return benchmark for public equities in the same jurisdiction.
(4) Net income impact does not consider any impact of the market correction on assumed future return assumptions.
(5) Please refer to "Sensitivity of Earnings to Changes in Assumptions" for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions.

Foreign Exchange Risk Sensitivities and Exposure Measures

The Company generally matches the currency of its assets with the currency of the insurance and investment contract liabilities they support, with the objective of mitigating risk of loss arising from currency exchange rate changes. As at December 31, 2016, the Company did not have a material unmatched currency exposure.

The following table shows the potential impact on core earnings of a 10% change in the Canadian dollar relative to our key operating currencies.

Potential impact on core earnings [1],[2]

As at December 31, ($ millions)	2016 +10% strengthening	2016 -10% weakening	2015 +10% strengthening	2015 -10% weakening
10% change in the Canadian dollar relative to the U.S. dollar and the Hong Kong dollar	**$ (230)**	**$ 230**	$ (230)	$ 230
10% change in the Canadian dollar relative to the Japanese yen	**(50)**	**50**	(50)	50

(1) This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
(2) See "Caution Related to Sensitivities" above.

Liquidity Risk

Liquidity risk is the risk of not having access to sufficient funds or liquid assets to meet both expected and unexpected cash and collateral demands.

Liquidity Risk Management Strategy

Global liquidity management policies and procedures are designed to provide adequate liquidity to cover cash and collateral obligations as they come due, and to sustain and grow operations in both normal and stressed conditions. They reflect legal, regulatory, tax, operational or economic impediments to inter-entity funding. The asset mix of our balance sheet takes into account the need to hold adequate unencumbered and appropriate liquid assets to satisfy the requirements arising under stressed scenarios and to allow our liquidity ratios to remain strong. We manage liquidity centrally and closely monitor the liquidity positions of our principal subsidiaries.

We seek to mitigate liquidity risk by diversifying our business across different products, markets, geographical regions and policyholders. We design insurance products to encourage policyholders to maintain their policies in-force, to help generate a diversified and stable flow of recurring premium income. We design the policyholder termination features of our wealth management products and related investment strategies with the goal of mitigating the financial exposure and liquidity risk related to unexpected policyholder terminations. We establish and implement investment strategies intended to match the term profile of the assets to the liabilities they support, taking into account the potential for unexpected policyholder terminations and resulting liquidity needs. Liquid assets represent a large portion of our total assets. We aim to reduce liquidity risk in our deposit funded businesses by diversifying our funding sources and appropriately managing the term structure of our funding. We forecast and monitor daily operating liquidity and cash movements in various individual entities and operations as well as centrally, aiming to ensure liquidity is available and cash is employed optimally.

We also maintain centralized cash pools and access to other sources of liquidity and contingent liquidity such as repurchase funding agreements. Our centralized cash pool consists of cash or near-cash, high quality short-term investments that are continually monitored for their credit quality and market liquidity.

We have established a variety of contingent funding sources. We maintain a $500 million committed unsecured revolving credit facility with certain Canadian chartered banks available for MFC, and a US$500 million committed unsecured revolving credit facility with certain U.S. banks available for MFC and certain of its subsidiaries. There were no outstanding borrowings under these credit facilities as of December 31, 2016. In addition, JHUSA is a member of the regional Federal Home Loan Bank of Indianapolis ("FHLBI"), which enables the Company to obtain loans from FHLBI as an alternative source of liquidity that is collateralized by qualifying mortgages or U.S. Treasury securities. Based on regulatory limitations, as of December 31, 2016, JHUSA had an estimated maximum borrowing capacity of US$4.4 billion under the FHLBI facility, with no amounts outstanding.

The following table outlines the maturity of the Company's significant financial liabilities.

Maturity of financial liabilities (1)

As at December 31, 2016 ($ millions)	Less than 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
Long-term debt	$ 7	$ 999	$ 669	$ 4,021	$ 5,696
Capital instruments	–	–	–	7,180	7,180
Derivatives	593	595	511	12,452	14,151
Deposits from Bank clients (2)	15,157	1,936	826	–	17,919
Lease obligations	135	188	138	505	966

(1) The amounts shown above are net of the related unamortized deferred issue costs.

(2) Carrying value and fair value of deposits from Bank clients as at December 31, 2016 was $17,919 million and $17,978 million, respectively (2015 – $18,114 million and $18,226 million, respectively). Fair value is determined by discounting contractual cash flows, using market interest rates currently offered for deposits with similar terms and conditions. All deposits from Bank clients were categorized in Level 2 of the fair value hierarchy (2015 – Level 2).

Through the normal course of business, pledging of assets is required to comply with jurisdictional regulatory and other requirements including collateral pledged to partially mitigate derivative counterparty credit risk, assets pledged to exchanges as initial margin and assets held as collateral for repurchase funding agreements. Total unencumbered assets were $396.3 billion as at December 31, 2016 (2015 – $385.3 billion).

Liquidity Risk Exposure Measures

We manage liquidity levels of the consolidated group and key subsidiaries against established thresholds. We measure liquidity under both immediate (within one month) and ongoing (within one year) stress scenarios. Our policy is to maintain the ratio of assets to liabilities, both adjusted for their liquidity values, above the pre-established limit.

Increased use of derivatives for hedging purposes has necessitated greater emphasis on measurement and management of contingent liquidity risk related to these instruments. The market value of our derivative portfolio is therefore regularly stress tested to assess the potential collateral and cash settlement requirements under various market conditions.

Manulife Bank has a standalone liquidity risk management policy framework. The framework includes stress testing, cash flow modeling, a funding plan and a contingency plan. The Bank has an established securitization infrastructure which enables the Bank to access a range of funding and liquidity sources. The Bank models extreme but plausible stress scenarios that demonstrate that the Bank has a sufficient pool of highly liquid money market securities and holdings of sovereign bonds, near-sovereign bonds and other liquid marketable securities, which when combined with the Bank's capacity to securitize residential mortgage assets provides sufficient liquidity to meet potential requirements under these stress scenarios.

Credit Risk

Credit risk is the risk of loss due to the inability or unwillingness of a borrower or counterparty to fulfill its payment obligations.

Credit Risk Management Strategy

Credit risk is governed by the Credit Committee which oversees the overall credit risk management program. The Company has established objectives for overall quality and diversification of our general fund investment portfolio and criteria for the selection of counterparties, including derivative counterparties, reinsurers and insurance providers. Our policies establish exposure limits by borrower, corporate connection, quality rating, industry, and geographic region, and govern the usage of credit derivatives. Corporate connection limits vary according to risk rating. Our general fund fixed income investments are primarily public and private investment grade bonds and commercial mortgages. We have a program for selling Credit Default Swaps ("CDS") that employs a highly selective, diversified and conservative approach. CDS decisions follow the same underwriting standards as our cash bond portfolio and the addition of this asset class allows us to better diversify our overall credit portfolio.

Our credit granting units follow a defined evaluation process that provides an objective assessment of credit proposals. We assign a risk rating based on a detailed examination of the borrower that includes a review of business strategy, market competitiveness,

industry trends, financial strength, access to funds, and other risks facing the organization. We assess and update risk ratings regularly, based on a standardized 22-point scale consistent with those of external rating agencies. For additional input to the process, we also assess credit risks using a variety of industry standard market-based tools and metrics. We map our risk ratings to pre-established probabilities of default and loss given defaults, based on historical industry and Company experience, and to resulting default costs.

We establish delegated credit approval authorities and make credit decisions on a case-by-case basis at a management level appropriate to the size and risk level of the transaction, based on the delegated authorities that vary according to risk rating. Major credit decisions are approved by the Credit Committee and the largest decisions are approved by the CEO and, in certain cases, by the Board of Directors.

We limit the types of authorized derivatives and applications and require pre-approval of all derivative application strategies and regular monitoring of the effectiveness of derivative strategies. Derivative counterparty exposure limits are established based on a minimum acceptable counterparty credit rating (generally A- from internationally recognized rating agencies). We measure derivative counterparty exposure as net potential credit exposure, which takes into consideration mark-to-market values of all transactions with each counterparty, net of any collateral held, and an allowance to reflect future potential exposure. Reinsurance counterparty exposure is measured reflecting the level of ceded liabilities. The creditworthiness of all reinsurance counterparties is reviewed internally on a regular basis.

Regular reviews of the credits within the various portfolios are undertaken with the goal of identifying changes to credit quality, and where appropriate, taking corrective action. Prompt identification of problem credits is a key objective. Credit Risk Management provides independent credit risk oversight by reviewing assigned risk ratings, and monitoring problem and potential problem credits.

We establish an allowance for losses on a loan when it becomes impaired as a result of deterioration in credit quality, to the extent there is no longer assurance of timely realization of the carrying value of the loan and related investment income. We reduce the carrying value of an impaired loan to its estimated net realizable value when we establish the allowance. We establish an allowance for losses on reinsurance contracts when a reinsurance counterparty becomes unable or unwilling to fulfill its contractual obligations. We base the allowance for loss on current recoverables and ceded policy liabilities. There is no assurance that the allowance for losses will be adequate to cover future potential losses or that additional allowances or asset write-downs will not be required.

Policy liabilities include general provisions for credit losses from future asset impairments.

Our credit policies, procedures and investment strategies are established under a strong governance framework and are designed to ensure that risks are identified, measured and monitored consistent with our risk appetite. We seek to actively manage credit exposure in our investment portfolio to reduce risk and minimize losses, and derivative counterparty exposure is managed proactively. In 2016, credit defaults and downgrade charges (changes in credit ratings impact the measurement of our policy liabilities – see Critical Accounting and Actuarial Policies below) were generally in line with our historical averages. However, we still expect volatility on a quarterly basis and losses could potentially rise above long-term expected and historical levels.

Credit Risk Exposure Measures

As at December 31, 2016 and December 31, 2015, for every 50% that credit defaults over the next year exceed the rates provided for in policy liabilities, net income attributed to shareholders would be reduced by $54 million and $57 million in each year, respectively. Downgrades could also be higher than assumed in policy liabilities resulting in policy liability increases and a reduction in net income attributed to shareholders.

The table below shows net impaired assets and allowances for loan losses.

Net Impaired Assets and Loan Losses

As at December 31, ($ millions, unless otherwise stated)	**2016**	2015
Net impaired fixed income assets	**$ 224**	$ 161
Net impaired fixed income assets as a % of total invested assets	**0.070%**	0.052%
Allowance for loan losses	**$ 118**	$ 101

Insurance Risk

Insurance risk is the risk of loss due to actual experience emerging differently than assumed when a product was designed and priced with respect to mortality and morbidity claims, policyholder behaviour and expenses.

Insurance Risk Management Strategy

Insurance risk is governed by the Product Oversight Committee which oversees the overall insurance risk management program. The committee has established a broad framework for managing insurance risk under a set of policies, standards and guidelines, to ensure that our product offerings align with our risk taking philosophy and risk limits, and achieve acceptable profit margins. These cover:

- product design features
- use of reinsurance
- pricing models and software
- internal risk-based capital allocations
- target profit objectives
- pricing methods and assumption setting
- stochastic and stress scenario testing
- required documentation
- review and approval processes
- experience monitoring programs

In each business unit that sells products with insurance risks, we designate individual pricing officers who are accountable for pricing activities, chief underwriters who are accountable for underwriting activities and chief claims risk managers who are accountable for claims activities. Both the pricing officer and the general manager of each business unit approve the design and pricing of each product, including key claims, policyholder behaviour, investment return and expense assumptions, in accordance with global policies and standards. Risk management functions provide additional oversight, review and approval of all product and pricing initiatives, as well as material underwriting initiatives. Actuarial functions provide oversight review and approval of policy liability valuation methods and assumptions. In addition, both risk and actuarial functions review and approve new reinsurance arrangements. We perform annual risk and compliance self-assessments of the product development, pricing, underwriting and claims activities of all businesses. To leverage best practices, we facilitate knowledge transfer between staff working with similar businesses in different geographies.

We utilize a global underwriting manual intended to ensure insurance underwriting practices for direct written life business are consistent across the organization while reflecting local conditions. Each business unit establishes underwriting policies and procedures, including criteria for approval of risks and claims adjudication policies and procedures.

We apply retention limits per insured life that are intended to reduce our exposure to individual large claims which are monitored in each business unit. These retention limits vary by market and jurisdiction. We reinsure exposure in excess of these limits with other companies. Our current global life retention limit is US$30 million for individual policies (US$35 million for survivorship life policies) and is shared across businesses. We apply lower limits in some markets and jurisdictions. We aim to further reduce exposure to claims concentrations by applying geographical aggregate retention limits for certain covers. Enterprise-wide, we aim to reduce the likelihood of high aggregate claims by operating globally and insuring a wide range of unrelated risk events.

We seek to actively manage the Company's aggregate exposure to each of policyholder behaviour risk and claims risk against enterprise-wide economic capital and earnings-at-risk limits. Policyholder behaviour risk limits cover the combined risk arising from policy lapses and surrenders, withdrawals and other policyholder driven activity. The claims risk limits cover the combined risk arising from mortality, longevity and morbidity.

Internal experience studies, as well as trends in our experience and that of the industry, are monitored to update current and projected claims and policyholder behaviour assumptions, resulting in updates to policy liabilities as appropriate.

Operational Risk

Operational risk is the risk of loss resulting from inadequate or failed internal processes, systems failures, human-performance failures or from external events.

Operational Risk Management Strategy

Our corporate governance practices, corporate values, and integrated enterprise-wide approach to managing risk set the foundation for mitigating operational risks. This base is further strengthened by internal controls and systems, compensation programs, and seeking to hire and retain trained and competent people throughout the organization. We align compensation programs with business strategy, long-term shareholder value and good governance practices, and we benchmark these compensation practices against peer companies.

We have an enterprise operational risk management framework that sets out the processes we use to identify, assess, manage, mitigate and report on significant operational risk exposures. Execution of our operational risk management strategy focuses on change management and working to achieve a cultural shift toward greater awareness and understanding of operational risk. We have an Operational Risk Committee, which is the main decision-making committee for all operational risk matters, and which has oversight responsibility for operational risk strategy, management and governance. We have enterprise-wide risk management programs for specific operational risks that could materially impact our ability to do business or impact our reputation.

Legal and Regulatory Risk Management Strategy

Global Compliance oversees our regulatory compliance program and function, supported by designated Chief Compliance Officers in every Division. The program is designed to promote compliance with regulatory obligations worldwide and to assist in making the Company aware of the laws and regulations that affect us, and the risks associated with failing to comply. Divisional compliance groups monitor emerging legal and regulatory issues and changes, and prepare us to address new requirements. Global Compliance also independently assesses and monitors the effectiveness of a broad range of regulatory compliance processes and business practices against potential legal, regulatory, fraud and reputation risks, and allows significant issues to be escalated and proactively mitigated. Among these processes and business practices are: privacy (i.e. handling of personal and other confidential information), sales and marketing practices, sales compensation practices, asset management practices, fiduciary responsibilities, employment practices, underwriting and claims processing, product design, and regulatory filings. In addition, we have policies, processes and controls in place to help protect the Company, our customers and other related third parties from acts of fraud and from risks associated with money laundering and terrorist financing. Audit Services, Global Compliance and divisional compliance personnel periodically assess the effectiveness of the control environment. For further discussion of government regulation and legal proceedings, refer to "Government Regulation" in MFC's Annual Information Form dated February 9, 2017 and "Legal and Regulatory Proceedings" below.

Technology, Information Security and Business Continuity Risk Management Strategy

We have an enterprise-wide business continuity and disaster recovery program. This includes policies, plans and procedures that seek to minimize the impact of natural or man-made disasters, and is designed to ensure that key business functions can continue normal operations in the event of a major disruption. Each business unit is accountable for preparing and maintaining detailed business continuity plans and processes. The global program incorporates periodic scenario analysis designed to validate the assessment of both critical and non-critical units, as well as the establishment and testing of appropriate business continuity plans for all critical functions. The business continuity team establishes and regularly tests crisis management plans and global crisis communications protocols. We maintain off-site backup facilities and failover capability designed to minimize downtime and accelerate system recovery.

Our Technology Risk Management Function provides strategy, direction, and oversight, and facilitates governance for all technology risk domain activities across Manulife. The scope of this function includes: reducing information risk exposures by introducing a robust enterprise information risk management framework and supporting infrastructure for proactively identifying, managing, monitoring and reporting on critical information risk exposures; promoting transparency and informed decision-making by building and maintaining information risk profiles and risk dashboards for Global Information Services and Divisions aligned with enterprise and operational risk reporting; providing advisory services to Global Services and the Divisions around current and emerging technology risks and their impact to the Company's information risk profile; and reducing vendor information risk exposures by incorporating sound information risk management practices into sourcing, outsourcing and offshoring initiatives and programs.

The enterprise-wide information security program, which is overseen by the Chief Information Risk Officer, seeks to mitigate information security risks. This program establishes the information security framework for the Company, including governance, policies and standards, and appropriate controls to protect information and computer systems. We also have annual security awareness training sessions for all employees.

Many jurisdictions in which we operate are implementing more stringent privacy legislation. Our global privacy program, overseen by our Chief Privacy Officer, seeks to manage the risk of privacy breaches. It includes policies and standards, ongoing monitoring of emerging privacy legislation, and a network of privacy officers. Processes have been established to provide guidance on handling personal information and for reporting privacy incidents and issues to appropriate management for response and resolution.

In addition, the Chief Information Risk Officer, the Chief Privacy Officer, and their teams work closely on information security and privacy matters.

Human Resource Risk Management Strategy

We have a number of human resource policies, practices and programs in place that seek to manage the risks associated with attracting and retaining top talent, including recruiting programs at every level of the organization, training and development programs for our individual contributor and leadership segments globally, employee engagement surveys, and competitive compensation programs that are designed to attract, motivate and retain high-performing and high potential employees.

Model Risk Management Strategy

We have designated model risk management teams working closely with model owners and users that seek to manage model risk. Our model risk oversight program includes processes intended to ensure that our critical business models are conceptually sound and used as intended, and to assess the appropriateness of the calculations and outputs.

Third-Party Risk Management Strategy

Our governance framework to address third-party risk includes appropriate policies (such as our Global Outsourcing Policy and Global Procurement Policy), standards and procedures, and monitoring of ongoing results and contractual compliance of third-party arrangements.

Project Risk Management Strategy

To seek to ensure that key projects are successfully implemented and monitored by management, we have a Global Project Management Centre of Expertise, which is responsible for establishing policies and standards for project management. Our policies, standards and practices are benchmarked against leading practices.

Environmental Risk Management Strategy

Our Environmental Risk Policy reflects the Company's commitment to conducting all business activities in a manner that recognizes the need to preserve the quality of the natural environment. Our Environmental Risk Policy has been designed to monitor and manage environmental risk and to seek to achieve compliance with all applicable environmental laws and regulations for business units, affiliates and subsidiaries. Business unit environmental procedures, protocols and due diligence standards are in place to help identify, monitor and manage environmental issues in advance of acquisition of property, to help to mitigate environmental risks. Historical and background investigation and subsequent soil and ground water subsurface testing may be conducted as required to assess manageable environmental risk. Regular property inspections and limitations on permitted activities further help to manage environmental liability or financial risk. Other potentially significant financial risks for individual assets, such as fire and earthquake, have generally been insured where practicable.

Capital Management Framework

Manulife seeks to manage its capital with the objectives of:

- Operating with sufficient capital to be able to honour all commitments to its policyholders and creditors with a high degree of confidence;
- Retaining the ongoing confidence of regulators, policyholders, rating agencies, investors and other creditors in order to ensure access to capital markets; and
- Optimizing return on capital to meet shareholders' expectations subject to constraints and considerations of adequate levels of capital established to meet the first two objectives.

Capital is managed and monitored in accordance with the Capital Management Policy. The Policy is reviewed and approved by the Board of Directors annually and is integrated with the Company's risk and financial management frameworks. It establishes guidelines regarding the quantity and quality of capital, internal capital mobility, and proactive management of ongoing and future capital requirements.

Our capital management framework takes into account the requirements of the Company as a whole as well as the needs of each of our subsidiaries. Internal capital targets are set above regulatory requirements, and consider a number of factors, including expectations of regulators and rating agencies, results of sensitivity and stress testing and our own risk assessments. We monitor against these internal targets and initiate actions appropriate to achieving our business objectives.

We periodically assess the strength of our capital position under various stress scenarios. The annual Dynamic Capital Adequacy Testing ("DCAT") typically quantifies the financial impact of economic events arising from shocks in public equity and other markets, interest rates and credit, amongst others. Our 2016 DCAT results demonstrate that we would have sufficient assets, under the various adverse scenarios tested, to discharge our policy liabilities. This conclusion was also supported by a variety of other stress tests conducted by the Company.

We use an Economic Capital ("EC") framework to inform our internal view of the level of required capital and available capital. The EC framework is a key component of the Own Risk and Solvency Assessment ("ORSA") process, which ties together our risk management, strategic planning and capital management practices to confirm that our capital levels continue to be adequate from an economic perspective.

Capital management is also integrated into our product planning and performance management practices.
In order to mitigate the impact of currency movements on the consolidated capital ratios, the currency mix of assets supporting capital is managed in relation to the Company's global capital requirements. As a result, both available and required capital increase (decrease) when the Canadian dollar weakens (strengthens).

The composition of capital between equity and other capital instruments impacts the financial leverage ratio which is an important consideration in determining the Company's financial strength and credit ratings. The Company monitors and rebalances its capital mix through capital issuances and redemptions.

Capital and Funding Activities

In 2016, Manulife commenced its global funding strategy to diversify funding source and broaden our investor base. We raised $5.4 billion of funding in Canada, the U.S., and various markets in Asia. During the year ended December 31, 2016, $1.1 billion of securities matured or were redeemed.

The following table provides our funding activity for the year ended December 31, 2016

($ millions)[1]	Issued	Redeemed or matured
Preferred shares[2],[3]	$ 900	$ –
Subordinated debentures[4],[5]	464	950
Senior debt[6],[7]	4,055	150
Total	$ 5,419	$ 1,100

(1) Amounts have been translated to Canadian dollar equivalents using the December 31, 2016 exchange rate.
(2) A total of $900 million of preferred shares were issued during the year: MFC issued 16 million Non-cumulative 5-Year Rate Reset Class 1 Shares, Series 21 ("Series 21 Shares") for gross proceeds of $400 million on February 25, 2016 and an additional 1 million Series 21 Shares for gross proceeds of $25 million on March 3, 2016; MFC issued 19 million Non-cumulative 5-Year Rate Reset Class 1 Shares, Series 23 for gross proceeds of $475 million on November 22, 2016.
(3) Excludes 1,664,169 Non-cumulative Rate Reset Class 1 Shares, Series 3 ("Series 3 Shares") issued by MFC which were converted on a one-for-one basis into Non-cumulative Floating Rate Class 1 Shares, Series 4 ("Series 4 Shares") issued by MFC. For further details on the preferred share conversions, refer to Note 13 Share Capital and Earnings Per Share.
(4) Issued SG$500 million (3.85%) of MFC subordinated debentures on May 25, 2016.
(5) A total of $950 million of subordinated debentures were redeemed during the year: $550 million (4.21%) MLI subordinated debentures on November 18, 2016 and $400 million (Floating) JHFC subordinated notes on December 15, 2016.
(6) A total of US$3.02 billion of MFC senior notes were issued during the year: US$750 million (5.375%) and US$1 billion (4.150%) on March 4, 2016, US$1 billion (4.70%) on June 23, 2016 and US$270 million (3.527%) on December 2, 2016.
(7) $150 million promissory note due to Manulife Finance (Delaware) L.P. matured on December 15, 2016.

The following measure of capital reflects our capital management activities at the MFC level.

As at December 31, ($ millions)	2016	2015	2014
Non-controlling interests	**$ 743**	$ 592	$ 464
Participating policyholders' equity	**248**	187	156
Preferred shares	**3,577**	2,693	2,693
Common shareholders' equity	**38,255**	38,466	30,613
Total equity[1]	**42,823**	41,938	33,926
Adjusted for accumulated other comprehensive loss on cash flow hedges	**(232)**	(264)	(211)
Total equity excluding accumulated other comprehensive loss on cash flow hedges	**43,055**	42,202	34,137
Liabilities for preferred shares and capital instruments	**7,180**	7,695	5,426
Total capital	**$ 50,235**	$ 49,897	$ 39,563

(1) Total equity includes unrealized gains and losses on AFS debt securities and AFS equities, net of taxes. The unrealized gain or loss on AFS debt securities are excluded from the OSFI definition of regulatory capital. As at December 31, 2016, the unrealized loss on AFS debt securities, net of taxes, $634 million (2015 – $81 million unrealized gain).

The "Total capital" referred to in the table above does not include $5.7 billion (2015 – $1.9 billion, 2014 – $3.9 billion) of senior indebtedness issued by MFC because this form of financing does not meet OSFI's definition of regulatory capital at the MFC level. The Company has down-streamed the proceeds from this financing into operating entities in a form that qualifies as regulatory capital at the subsidiary level. Total capital in 2014 also does not include liabilities for subscription receipts issued in 2014 as part of the financing of the Standard Life acquisition. For regulatory purposes, capital is further adjusted for various additions or deductions, as mandated by the guidelines issued by OSFI.

Total capital was $50.2 billion as at December 31, 2016 compared with $49.9 billion as at December 31, 2015, an increase of $0.3 billion. The increase from December 31, 2015 was primarily driven by net income attributed to shareholders net of dividends paid of $1.4 billion and net capital issuances of $0.4 billion (does not include the $3.9 billion of senior debt issued net of maturities, as it is not in the definition of regulatory capital), partially offset by the unfavourable impact of foreign exchange rates of $1.0 billion and the unfavourable change in unrealized losses on AFS debt securities of $0.7 billion.

Financial Leverage Ratio

MFC's financial leverage ratio increased to 29.5% at year-end 2016 from 23.8% a year ago. The 5.7 point increase primarily related to net capital issuances in 2016 of $4.3 billion which addressed higher regulatory capital requirements through issuances in several markets as we execute on our global funding diversification strategy.

Common Shareholder Dividends

The declaration and payment of shareholder dividends and the amount thereof are at the discretion of the Board of Directors and depend upon various factors, including the results of operations, financial condition, cash requirements and future prospects of the Company and regulatory restrictions on the payment of shareholder dividends, as well as any other factors deemed relevant by the Board of Directors.

Common Shareholder Dividends Paid

For the years ended December 31, $ per share	2016	2015	2014
Dividends paid	**$ 0.740**	$ 0.665	$ 0.570

The Company offers a Dividend Reinvestment Program ("DRIP") whereby shareholders may elect to automatically reinvest dividends in the form of MFC common shares instead of receiving cash. The offering of the program and its terms of execution are subject to the Board of Directors' discretion. In 2016, common shares in connection with DRIP were purchased on the open market with no applicable discount.

Regulatory Capital Position[1]

MFC monitors and manages its consolidated capital in compliance with the applicable OSFI guideline. Under this regime our consolidated available capital is measured against a required amount of risk capital determined in accordance with the guideline.

MFC's operating activities are mostly conducted within MLI or its subsidiaries. MLI is regulated by OSFI and is subject to consolidated risk-based capital requirements using the OSFI MCCSR framework. Some affiliate reinsurance business is undertaken outside the MLI consolidated framework.

Our MCCSR ratio for MLI was 230% as at December 31, 2016, compared with 223% at the end of 2015, and is well in excess of OSFI's Supervisory Target ratio of 150% and Regulatory Minimum ratio of 120%. The increase in the MCCSR ratio is primarily due to

[1] The "Risk Factors" section of the MD&A outlines a number of regulatory capital risks.

increased capital from net capital issuances and net income, partially offset by increases in required capital and the funding of MFC shareholder dividends. MFC's MCCSR ratio was 199% as at December 31, 2016. The difference between the MLI and MFC ratios was largely due to the $5.7 billion of MFC senior debt outstanding that, under OSFI rules, does not qualify as available capital at the MFC level.

As at December 31, 2016, MLI's non-consolidated operations and subsidiaries all maintained capital levels in excess of local requirements.

OSFI will be implementing a revised approach to the regulatory capital framework in Canada to come into effect in 2018. See "Risk Management – Regulatory Updates" above.

Remittability of Capital

As part of its capital management, Manulife promotes internal capital mobility so that Manulife's parent company has access to funds to meet its obligations and to optimize the use of excess capital. Cash remittance is defined as the cash remitted or payable to the Group from operating subsidiaries and excess capital generated by stand-alone Canadian operations. It is one of the key performance indicators used by management to evaluate our financial flexibility.

In 2016, MFC subsidiaries delivered $1.8 billion in remittances, which was $400 million lower compared with the 2015 level. Robust remittances from our Canadian and U.S. subsidiaries were offset by capital injections to our Asian subsidiaries, which were needed largely to address the impact of lower interest rates on local capital requirements.

Credit Ratings

Manulife's operating companies have strong financial strength ratings from credit rating agencies. Maintaining strong ratings on debt and capital instruments issued by MFC and its subsidiaries allows us to access capital markets at competitive pricing levels. Ratings are important factors in establishing the competitive position of insurance companies and maintaining public confidence in products being offered. Should these credit ratings decrease materially, our cost of financing may increase and our access to funding and capital through capital markets could be reduced.

During 2016, Moody's, DBRS, Fitch and A.M. Best maintained their assigned ratings of MFC and its primary insurance operating companies. S&P maintained their assigned ratings of MFC and all primary operating companies, with the exception of Manulife Life Insurance Company, our Japan subsidiary ("Manulife Japan"). On March 18, 2016, S&P placed the AA- insurer financial strength rating of Manulife Japan on Creditwatch with negative implications after the identification of a misapplication of its guarantee criteria. On June 14, 2016, S&P removed the Creditwatch on Manulife Japan's financial strength rating and downgraded the rating one notch, reflecting the A+ rating ceiling for the Japan sovereign.

The following table summarizes the financial strength and claims paying ability ratings of MLI and certain of its subsidiaries as at February 3, 2017.

Financial Strength Ratings

	S&P	Moody's	DBRS	Fitch	A.M. Best
The Manufacturers Life Insurance Company	**AA-**	**A1**	**AA(Low)**	**AA-**	**A+ (Superior)**
John Hancock Life Insurance Company (U.S.A.)	**AA-**	**A1**	**Not Rated**	**AA-**	**A+ (Superior)**
Manulife (International) Limited	**AA-**	**Not Rated**	**Not Rated**	**Not Rated**	**Not Rated**
Manulife Life Insurance Company	**A+**	**Not Rated**	**Not Rated**	**Not Rated**	**Not Rated**

As at February 3, 2017, S&P, Moody's, DBRS, Fitch, and A.M. Best had a stable outlook on these ratings.

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Critical Accounting and Actuarial Policies

The preparation of financial statements in accordance with IFRS requires management to make estimates and assumptions that affect the reported amounts and disclosures made in the Consolidated Financial Statements and accompanying notes. These estimates and assumptions are based on historical experience, management's assessment of current events and conditions and activities that the Company may undertake in the future as well as possible future economic events. Actual results could differ from these estimates. The estimates and assumptions described in this section depend upon subjective or complex judgments about matters that may be uncertain, and changes in these estimates and assumptions could materially impact the Consolidated Financial Statements.

Our significant accounting policies are described in note 1 to the Consolidated Financial Statements. Significant estimation processes relate to the determination of insurance and investment contract liabilities, assessment of relationships with other entities for consolidation, fair value of certain financial instruments, derivatives and hedge accounting, provisioning for asset impairment, determination of pension and other post-employment benefit obligations and expenses, income taxes and uncertain tax positions, valuation and impairment of goodwill and intangible assets and the measurement and disclosure of contingent liabilities as described below. In addition, in the determination of the fair values of invested assets, where observable market data is not available, management applies judgment in the selection of valuation models.

Policy Liabilities (Insurance and Investment Contract Liabilities)

Policy liabilities for IFRS are valued in Canada under standards established by the Actuarial Standards Board. These standards are designed to ensure we establish an appropriate liability on the Consolidated Statements of Financial Position to cover future obligations to all our policyholders. The assumptions underlying the valuation of policy liabilities are required to be reviewed and updated on an ongoing basis to reflect recent and emerging trends in experience and changes in risk profile of the business. In conjunction with prudent business practices to manage both product and asset related risks, the selection and monitoring of appropriate valuation assumptions is designed to minimize our exposure to measurement uncertainty related to policy liabilities.

Determination of Policy Liabilities

Policy liabilities have two major components: a best estimate amount and a provision for adverse deviation. The best estimate amount represents the estimated value of future policyholder benefits and settlement obligations to be paid over the term remaining on in-force policies, including the costs of servicing the policies. The best estimate amount is reduced by the future expected policy revenues and future expected investment income on assets supporting the policies, before any consideration for reinsurance ceded. To determine the best estimate amount, assumptions must be made for a number of key factors, including future mortality and morbidity rates, investment returns, rates of policy termination, and premium persistency, operating expenses, certain taxes (other than income taxes, and includes temporary tax timing and permanent tax rate differences on the cash flows available to satisfy policy obligations) and foreign currency. Reinsurance is used to transfer part or all of a policy liability to another insurance company at terms negotiated with that insurance company. A separate asset for reinsurance ceded is calculated based on the terms of the reinsurance treaties that are in-force, with deductions taken for the credit standing of the reinsurance counterparties where appropriate.

To recognize the uncertainty involved in determining the best estimate actuarial liability assumptions, a provision for adverse deviation ("PfAD") is established. The PfAD is determined by including a margin of conservatism for each assumption to allow for possible mis-estimation of, or deterioration in, future experience in order to provide greater comfort that the policy liabilities will be sufficient to pay future benefits. The CIA establishes suggested ranges for the level of margins for adverse deviation based on the risk profile of the business. Our margins are set taking into account the risk profile of our business. The effect of these margins is to increase policy liabilities over the best estimate assumptions. The margins for adverse deviation decrease the income that is recognized at the time a new policy is sold and increase the income recognized in later periods as the margins release as the remaining policy risks reduce.

Best Estimate Assumptions

We follow established processes to determine the assumptions used in the valuation of our policy liabilities. The nature of each risk factor and the process for setting the assumptions used in the valuation are discussed below.

Mortality

Mortality relates to the occurrence of death. Mortality assumptions are based on our internal as well as industry past and emerging experience and are differentiated by sex, underwriting class, policy type and geographic market. We make assumptions about future mortality improvements using historical experience derived from population data. Reinsurance is used to offset some of our direct mortality exposure on in-force life insurance policies with the impact of the reinsurance directly reflected in our policy valuation for the determination of policy liabilities net of reinsurance. Actual mortality experience is monitored against these assumptions separately for each business. The results are favourable where mortality rates are lower than assumed for life insurance and where mortality rates are higher than assumed for payout annuities. Overall 2016 experience was unfavourable (2015 – unfavourable) when compared with our assumptions.

Morbidity

Morbidity relates to the occurrence of accidents and sickness for the insured risks. Morbidity assumptions are based on our internal as well as industry past and emerging experience and are established for each type of morbidity risk and geographic market. For our

JH Long Term Care business we make assumptions about future morbidity changes. Actual morbidity experience is monitored against these assumptions separately for each business. Our morbidity risk exposure relates to future expected claims costs for long-term care insurance, as well as for group benefits and certain individual health insurance products we offer. Overall 2016 experience was unfavourable (2015 – unfavourable) when compared with our assumptions.

Property and Casualty

Our Property and Casualty Reinsurance business insures against catastrophic losses from natural and human disasters. Policy liabilities are held for incurred claims including provision for anticipated development and for premiums received and not yet earned. Overall 2016 claims loss experience was in line with expectations (2015 – in line with expectations) with respect to the provisions that were established.

Policy Termination and Premium Persistency

Policy termination includes lapses and surrenders, where lapses represent the termination of policies due to non-payment of premiums and surrenders represent the voluntary termination of policies by policyholders. Premium persistency represents the level of ongoing deposits on contracts where there is policyholder discretion as to the amount and timing of deposits. Policy termination and premium persistency assumptions are primarily based on our recent experience adjusted for expected future conditions. Assumptions reflect differences by type of contract within each geographic market and actual experience is monitored against these assumptions separately for each business. Overall 2016 experience was unfavourable (2015 – unfavourable) when compared with our assumptions.

Expenses and Taxes

Operating expense assumptions reflect the projected costs of maintaining and servicing in-force policies, including associated overhead expenses. The expenses are derived from internal cost studies and are projected into the future with an allowance for inflation. For some developing businesses, there is an expectation that unit costs will decline as these businesses mature. Actual expenses are monitored against assumptions separately for each business. Overall maintenance expenses for 2016 were unfavourable (2015 – unfavourable) when compared with our assumptions. Taxes reflect assumptions for future premium taxes and other non-income related taxes. For income taxes, policy liabilities are adjusted only for temporary tax timing and permanent tax rate differences on the cash flows available to satisfy policy obligations.

Investment Returns

We segment assets to support liabilities by business segment and geographic market and establish investment strategies for each liability segment. The projected cash flows from these assets are combined with projected cash flows from future asset purchases/sales to determine expected rates of return for future years. The investment strategies for future asset purchases and sales are based on our target investment policies for each segment and the reinvestment returns are derived from current and projected market rates for fixed interest investments and our projected outlook for non-fixed interest assets. Credit losses are projected based on our own and industry experience, as well as specific reviews of the current investment portfolio. Investment return assumptions for each asset class also incorporate expected investment management expenses that are derived from internal cost studies. In 2016, actual investment returns were unfavourable (2015 – unfavourable) when compared with our assumptions. Investment-related experience and the direct impact of interest rates and equity markets are discussed in the “Financial Performance” section above.

Segregated Funds

We offer segregated funds to policyholders that offer certain guarantees, including guaranteed returns of principal on maturity or death, as well as guarantees of minimum withdrawal amounts or income benefits. The on-balance sheet liability for these benefits is the expected cost of these guarantees including appropriate valuation margins for the various contingencies including mortality and lapse. The dominant driver of the cost of guarantees is the return on the underlying funds in which the policyholders invest. See “Risk Management – Market Risk – Hedging Strategies for Variable Annuity and Other Equity Risks” and the “Financial Performance – Analysis of Net Income” sections above.

Foreign Currency

Foreign currency risk results from a mismatch of the currency of the policy liabilities and the currency of the assets designated to support these obligations. We generally match the currency of our assets with the currency of the liabilities they support, with the objective of mitigating the risk of loss arising from movements in currency exchange rates. Where a currency mismatch exists, the assumed rate of return on the assets supporting the liabilities is reduced to reflect the potential for adverse movements in exchange rates.

Experience Adjusted Products

Where policies have features that allow the impact of changes in experience to be passed on to policyholders through policy dividends, experience rating refunds, credited rates or other adjustable features, the projected policyholder benefits are adjusted to reflect the projected experience. Minimum contractual guarantees and other market considerations are taken into account in determining the policy adjustments.

Provision for Adverse Deviation

The aggregate provision for adverse deviation is the sum of the provisions for adverse deviation for each risk factor. Margins for adverse deviation are established by product type and geographic market for each assumption or factor used in the determination of the best estimate actuarial liability. The margins are established based on the risk characteristics of the business being valued.

Margins for interest rate risk are included by testing a number of scenarios of future interest rates. The margin can be established by testing a limited number of scenarios, some of which are prescribed by Canadian Actuarial Standards of Practice, and determining the liability based on the worst outcome. Alternatively, the margin can be set by testing many scenarios, which are developed according to actuarial guidance. Under this approach the liability would be the average of the outcomes above a percentile in the range prescribed by the Canadian Actuarial Standards of Practice.

In addition to the explicit margin for adverse deviation, the valuation basis for segregated fund liabilities explicitly limits the future revenue recognition in the valuation basis to the amount necessary to offset acquisition expenses, after allowing for the cost of any guarantee features. The fees that are in excess of this limitation are reported as an additional margin and are shown in segregated fund non-capitalized margins.

The provision for adverse deviation and the future revenue deferred in the valuation due to the limitations on recognition of future revenue in the valuation of segregated fund liabilities are shown in the table below.

As at December 31, ($ millions)	**2016**	2015
Best estimate actuarial liability	**$ 207,573**	$ 196,098
Provision for adverse deviation		
Insurance risks (mortality/morbidity)	**16,553**	15,087
Policyholder behaviour (lapse/surrender/premium persistency)	**4,416**	4,204
Expenses	**2,200**	2,498
Investment risks (non-credit)	**26,202**	27,793
Investment risks (credit)	**1,862**	1,715
Segregated funds guarantees	**2,462**	2,565
Total provision for adverse deviation ("PfAD") [1]	**53,695**	53,862
Segregated funds – additional margins	**10,167**	10,656
Total of PfAD and additional segregated fund margins	**$ 63,862**	$ 64,518

[1] Reported net actuarial liabilities (excluding the $5,918 million (2015 – $6,354 million) reinsurance asset related to the Company's in-force participating life insurance closed block that is retained on a funds withheld basis as part of the NYL transaction) as at December 31, 2016 of $261,268 million (2015 – $249,960 million) are comprised of $207,573 million (2015 – $196,098 million) of best estimate actuarial liabilities and $53,695 million (2015 – $53,862 million) of PfAD.

The change in the PfAD from period to period is impacted by changes in liability and asset composition, by currency and interest rate movements and by material changes in valuation assumptions. The overall increase in PfAD for insurance risks and policyholder behaviour was primarily due to our annual review of actuarial valuation methods and assumptions. The overall decrease in PfAD for non-credit investment risks primarily resulted from our annual review of actuarial valuation methods and assumptions.

Sensitivity of Earnings to Changes in Assumptions

When the assumptions underlying our determination of policy liabilities are updated to reflect recent and emerging experience or change in outlook, the result is a change in the value of policy liabilities which in turn affects net income attributed to shareholders. The sensitivity of net income attributed to shareholders to changes in non-economic and certain asset related assumptions underlying policy liabilities is shown below, and assumes that there is a simultaneous change in the assumptions across all business units.

For changes in asset related assumptions, the sensitivity is shown net of the corresponding impact on income of the change in the value of the assets supporting liabilities. In practice, experience for each assumption will frequently vary by geographic market and business, and assumption updates are made on a business/geographic specific basis. Actual results can differ materially from these estimates for a variety of reasons, including the interaction among these factors when more than one changes, changes in actuarial and investment return and future investment activity assumptions, actual experience differing from the assumptions, changes in business mix, effective tax rates and other market factors, and the general limitations of our internal models.

Potential impact on net income attributed to shareholders arising from changes to non-economic assumptions [1]

As at December 31, ($ millions)	Decrease in net income attributable to shareholders 2016	2015
Policy related assumptions		
2% adverse change in future mortality rates [2],[4]		
Products where an increase in rates increases insurance contract liabilities	**$ (400)**	$ (400)
Products where a decrease in rates increases insurance contract liabilities	**(500)**	(500)
5% adverse change in future morbidity rates [3],[4]	**(3,700)**	(3,000)
10% adverse change in future termination rates [4]	**(1,900)**	(2,000)
5% increase in future expense levels	**(500)**	(400)

[1] The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in non-economic assumptions. Experience gains or losses would generally result in changes to future dividends, with no direct impact to shareholders.
[2] An increase in mortality rates will generally increase policy liabilities for life insurance contracts whereas a decrease in mortality rates will generally increase policy liabilities for policies with longevity risk such as payout annuities.
[3] No amounts related to morbidity risk are included for policies where the policy liability provides only for claims costs expected over a short period, generally less than one year, such as Group Life and Health.
[4] The impacts of the sensitivities on LTC for morbidity, mortality and lapse are assumed to be moderated by partial offsets from the Company's ability to contractually raise premium rates in such events, subject to state regulatory approval.

The increase in morbidity sensitivity between December 31, 2015 and December 31, 2016 is primarily due to updates to our valuation assumptions as a result of the Long Term Care triennial review.

Potential impact on net income attributed to shareholders arising from changes to asset related assumptions supporting actuarial liabilities

As at December 31, ($ millions)	Increase (decrease) in after-tax income 2016 Increase	2016 Decrease	2015 Increase	2015 Decrease
Asset related assumptions updated periodically in valuation basis changes				
100 basis point change in future annual returns for public equities [1]	**$ 500**	**$ (500)**	$ 600	$ (600)
100 basis point change in future annual returns for ALDA [2]	**2,900**	**(3,500)**	3,000	(3,400)
100 basis point change in equity volatility assumption for stochastic segregated fund modelling [3]	**(200)**	**200**	(300)	300

[1] The sensitivity to public equity returns above includes the impact on both segregated fund guarantee reserves and on other policy liabilities. For a 100 basis point increase in expected growth rates, the impact from segregated fund guarantee reserves is a $200 million increase (2015 – $200 million increase). For a 100 basis point decrease in expected growth rates, the impact from segregated fund guarantee reserves is a $200 million decrease (2015 – $200 million decrease). Expected long-term annual market growth assumptions for public equities pre-dividends for key markets are based on long-term historical observed experience and compliance with actuarial standards. The pre-dividend growth rates for returns in the major markets used in the stochastic valuation models for valuing segregated fund guarantees are 7.5% per annum in Canada, 7.6% per annum in the U.S. and 5.2% per annum in Japan. Growth assumptions for European equity funds are market-specific and vary between 5.8% and 7.85%.
[2] ALDA include commercial real estate, timber and farmland real estate, direct oil and gas properties, and private equities, some of which relate to oil and gas. Expected long-term return assumptions are set in accordance with the Standards of Practice for the valuation of insurance contract liabilities and guidance published by the CIA. The guidance requires that the investment return assumption for these assets should not be higher than the historical long-term average returns of an appropriate broad-based index. Where such experience is not available, investment return assumptions should not result in a lower reserve than an assumption based on a historical return benchmark for public equities in the same jurisdiction. Annual best estimate return assumptions for ALDA and public equity including market growth rates and annual income, such as rent, production proceeds and dividends, vary between 5.25% and 12%, with an average of 9.7% based on the current asset mix backing our guaranteed insurance and annuity business as of December 31, 2016. The annual return assumptions for ALDA and public equity, including margins for adverse deviations in our valuation which take into account the uncertainty of achieving the returns, will vary based on our holding period. On average, for a 20-year horizon, the assumption varies between 2.5% and 7.5%.
[3] Volatility assumptions for public equities are based on long-term historical observed experience and compliance with actuarial standards. The resulting volatility assumptions are 17.0% per annum in Canada and 17.15% per annum in the U.S. for large cap public equities, and 19% per annum in Japan. For European equity funds, the volatility varies between 16.25% and 18.4%.

Review of Actuarial Methods and Assumptions

A comprehensive review of actuarial methods and assumptions is performed annually. The review is designed to reduce the Company's exposure to uncertainty by ensuring assumptions for both asset related and liability related risks remain appropriate. This is accomplished by monitoring experience and selecting assumptions which represent a current best estimate view of expected future experience, and margins that are appropriate for the risks assumed. While the assumptions selected represent the Company's current best estimates and assessment of risk, the ongoing monitoring of experience and changes in the economic environment are likely to result in future changes to the valuation assumptions, which could be material.

2016 Review of Actuarial Methods and Assumptions

The 2016 full year review of actuarial methods and assumptions resulted in an increase in insurance and investment contract liabilities of $655 million, net of reinsurance, and a decrease in net income attributed to shareholders of $453 million.

For the year ended December 31, 2016 ($ millions)	Change in gross insurance and investment contract liabilities	Change in net insurance and investment contract liabilities	Change in net income attributed to shareholders
JH Long Term Care triennial review	$ 696	$ 696	$ (452)
Mortality and morbidity updates	(12)	(53)	76
Lapse and policyholder behavior			
U.S. Variable Annuities guaranteed minimum withdrawal benefit incidence and utilization	(1,024)	(1,024)	665
Other lapses and policyholder behaviour	516	431	(356)
Economic reinvestment assumptions	459	443	(313)
Other updates	719	162	(73)
Net impact	$ 1,354	$ 655	$ (453)

JH Long Term Care triennial review

U.S. Insurance completed a comprehensive long-term care experience study. This included a review of mortality, morbidity and lapse experience, as well as the reserve for in-force rate increases filed as a result of the 2013 review. In addition, the Company implemented refinements to the modelling of future tax cash flows for long-term care. The net impact of the review was a $452 million charge to net income attributed to shareholders for the year ended December 31, 2016.

Expected future claims costs increased primarily due to claims periods being longer than expected in policy liabilities, and a reduction in lapse and mortality rates. This increase in expected future claims costs was partially offset by a number of items, including expected future premium increases resulting from this year's review and a decrease in the margin for adverse deviations related to the rate of inflation embedded in our benefit utilization assumptions.

The review of premium increases assumed in the policy liabilities resulted in a benefit to earnings of $1.0 billion for the year ended December 31, 2016; this includes future premium increases that are due to our 2016 review of morbidity, mortality and lapse assumptions, and outstanding amounts from our 2013 state filings. Premium increases averaging approximately 20% will be sought on the vast majority of the in-force business, excluding the carryover of 2013 amounts requested. Our assumptions reflect the estimated timing and amount of state approved premium increases. Our actual experience obtaining price increases could be materially different than we have assumed, resulting in further increases or decreases in policy liabilities, which could be material.

Mortality and morbidity updates

Mortality and morbidity assumptions were updated across several business units to reflect recent experience, including updates to morbidity assumptions for certain medical insurance products in Japan, leading to a $76 million benefit to net income attributed to shareholders for the year ended December 31, 2016.

Updates to lapses and policyholder behaviour

U.S. Variable Annuities guaranteed minimum withdrawal benefit incidence and utilization assumptions were updated to reflect recent experience which led to a $665 million benefit to net income attributed to shareholders for the year ended December 31, 2016. We updated our incidence assumptions to reflect the favourable impact of policyholders taking withdrawals later than expected. This was partially offset by an increase in our utilization assumptions.

In Japan, lapse rates for term life insurance products were increased at certain durations which led to a $228 million charge to net income attributed to shareholders for the year ended December 31, 2016. Other updates to lapse and policyholder behavior assumptions were made across several product lines, including term products in Canada, which led to a $128 million charge to net income attributed to shareholders for the year ended December 31, 2016.

Updates to economic reinvestment assumptions

The Company updated economic reinvestment assumptions for risk-free rates used in the valuation of policy liabilities which resulted in a $313 million charge to net income attributed to shareholders for the year ended December 31, 2016. These updates included a proactive 10 basis point reduction to our URR assumptions and a commensurate change in our calibration criteria for stochastic risk-free rates. These updates reflect the fact that interest rates are lower than they were when the current prescribed URR and calibration criteria for stochastic risk-free rates were promulgated by the Actuarial Standards Board ("ASB") in 2014. The ASB has indicated that it will update the promulgation periodically, when necessary. We expect the promulgation to be updated in 2017 and, if required, we will make further updates to our economic reinvestment assumptions at that time.

Other updates

Other model refinements related to the projection of both asset and liability cash flows across several business units led to a $73 million charge to net income attributed to shareholders for the year ended December 31, 2016. This included a charge due to refinements to our CALM models and assumptions offset by a benefit due to refinements to the modelling of future tax cash flows for certain assets in the U.S.

2015 Review of Actuarial Methods and Assumptions

The 2015 full year review of actuarial methods and assumptions resulted in an increase in insurance and investment contract liabilities of $558 million, net of reinsurance, and a decrease in net income attributed to shareholders of $451 million for the year ended December 31, 2015.

For the year ended December 31, 2015 ($ millions)	Change in gross insurance and investment contract liabilities	Change in net insurance and investment contract liabilities	Change in net income attributed to shareholders
Mortality and morbidity updates	$ (191)	$ (146)	$ 168
Lapses and policyholder behaviour	953	571	(446)
Other updates	(584)	133	(173)
Net impact	$ 178	$ 558	$ (451)

Updates to mortality and morbidity

Assumptions were updated across several business units to reflect recent experience. In Japan, a reduction to the margin for adverse deviations applied to the best estimate morbidity assumptions for certain medical insurance products resulted in a $237 million increase in net income attributed to shareholders for the year ended December 31, 2015. The reduction in this margin is a result of emerging experience being aligned with expectations leading to a decrease in the level of conservatism required for this assumption.

Other mortality and morbidity updates led to a $69 million decrease in net income attributed to shareholders for the year ended December 31, 2015. This included a refinement to the modelling of mortality improvement on a portion of the Canadian retail insurance business that led to an increase to net income attributed to shareholders. This was more than offset by a review of the Company mortality assumption for some of the JH Annuities business and a number of other updates across several business units.

Updates to lapses and policyholder behaviour

Lapse rates were updated across several business units to reflect recent experience. Lapse rates for JH universal life and variable universal life products were updated which led to a net $235 million decrease in net income attributed to shareholders for the year ended December 31, 2015. Lapse rates for the low cost universal life products were reduced which led to a decrease in net income attributed to shareholders; this was partially offset by a reduction in lapse rates for the variable universal life products which led to an increase in net income attributed to shareholders.

Other updates to lapse and policyholder behavior assumptions were made across several product lines including term and whole life insurance products in Japan, which led to a $211 million decrease in net income attributed to shareholders for the year ended December 31, 2015.

Other updates

The Company implemented a refinement to the modelling of asset and liability cash flows associated with inflation-linked benefit options in the Long Term Care business, which led to a $264 million increase in net income attributed to shareholders for the year ended December 31, 2015.

The Company implemented a refinement to the projection of the term policy conversion options in Canadian retail insurance which led to a $200 million decrease in net income attributed to shareholders for the year ended December 31, 2015.

Other model refinements related to the projection of both asset and liability cash flows across several business units led to a $237 million decrease in net income attributed to shareholders for the year ended December 31, 2015. This included several items such as refinements to the modelling of reinsurance contracts in North America, updates to the future investment expense assumptions, updates to the future ALDA investment return assumptions and updates to certain future expense assumptions in JH Insurance.

Change in net insurance contract liabilities

The change in net insurance contract liabilities can be attributed to several sources: new business, acquisitions, in-force movement and currency impact. Changes in net insurance contract liabilities are substantially offset in the financial statements by premiums, investment income, policy benefits and other policy related cash flows. The changes in net insurance contract liabilities by business segment are shown below:

2016 Net Insurance Contract Liability Movement Analysis

For the year ended December 31, 2016 ($ millions)	Asia Division	Canadian Division	U.S. Division	Corporate and Other	Total
Balance, January 1	**$ 45,986**	**$ 71,473**	**$ 132,906**	**$ (503)**	**$ 249,862**
New business[1],[2]	**3,857**	**253**	**(493)**	**–**	**3,617**
In-force movement[1],[3]	**6,051**	**1,636**	**6,061**	**(75)**	**13,673**
Changes in methods and assumptions[1]	**108**	**22**	**549**	**(24)**	**655**
Currency impact[4]	**(1,435)**	**–**	**(3,831)**	**12**	**(5,254)**
Balance, December 31	**$ 54,567**	**$ 73,384**	**$ 135,192**	**$ (590)**	**$ 262,553**

(1) The $17,172 million increase reported as the change in insurance contract liabilities and change in reinsurance assets on the 2016 Consolidated Statements of Income primarily consists of changes due to normal in-force movement, new policies and changes in methods and assumptions. These three items net to an increase of $17,945 million, of which $16,906 million is included in the income statement increase in insurance contract liabilities and change in reinsurance assets, and $1,039 million is included in net claims and benefits. The Consolidated Statements of Income change in insurance contract liabilities also includes the change in embedded derivatives associated with insurance contracts. Of the $17,290 million net increase in insurance contract liabilities related to new business and in-force movement, $16,196 million was an increase in actuarial liabilities. The remaining amount was an increase of $1,094 million in other insurance contract liabilities.

(2) New business policy liability impact is positive/(negative) when estimated future premiums, together with future investment income, are expected to be more/(less) than sufficient to pay estimated future benefits, policyholder dividends and refunds, taxes (excluding income taxes) and expenses on new policies issued.

(3) The net in-force movement over the year was an increase of $13,673 million, reflecting expected growth in insurance contract liabilities in all three divisions.

(4) The decrease in policy liabilities from currency impact reflects the appreciation of the Canadian dollar relative to the U.S. dollar, Hong Kong dollar and Japanese yen. To the extent assets are currency matched to liabilities, the increase in insurance contract liabilities due to currency impact is offset by a corresponding increase from currency impact in the value of assets supporting those liabilities.

2015 Net Insurance Contract Liability Movement Analysis

For the year ended December 31, 2015 ($ millions)	Asia Division	Canadian Division	U.S. Division	Corporate and Other	Total
Balance, January 1	$ 33,662	$ 54,488	$ 121,671	$ (351)	$ 209,470
Acquisitions[1]	–	16,411	(13,375)	–	3,036
New business[2],[3]	1,044	104	1,057	–	2,205
In-force movement[2],[4],[5]	5,173	9	419	135	5,736
Changes in methods and assumptions[2]	46	452	279	(219)	558
Currency impact[6]	6,061	9	22,855	(68)	28,857
Balance, December 31	$ 45,986	$ 71,473	$ 132,906	$ (503)	$ 249,862

(1) In 2015, the Company acquired Standard Life and NYL assumed the Company's in-force participating life insurance closed block through net 60% reinsurance agreements. The U.S. division acquisition amount of $(13,375 million) consists of $(5,785 million) premium ceded and $(7,590 million) reinsurance asset. See note 3 to the 2016 Consolidated Financial Statements.

(2) The $642 million increase reported as the change in insurance contract liabilities and change in reinsurance assets on the 2015 Consolidated Statements of Income primarily consists of changes due to normal in-force movement, new policies and changes in methods and assumptions, including the $(7,590) million change in reinsurance asset related to the NYL reinsurance. These four items net to an increase of $909 million, of which $702 million is included in the income statement increase in insurance contract liabilities and change in reinsurance assets, and $207 million is included in net claims and benefits. The Consolidated Statements of Income change in insurance contract liabilities also includes the change in embedded derivatives associated with insurance contracts. Of the $7,941 million net increase in insurance contract liabilities related to new business and in-force movement, $7,710 million was an increase in actuarial liabilities. The remaining amount was an increase of $231 million in other insurance contract liabilities.

(3) New business policy liability impact is positive/(negative) when estimated future premiums, together with future investment income, are expected to be more/(less) than sufficient to pay estimated future benefits, policyholder dividends and refunds, taxes (excluding income taxes) and expenses on new policies issued.

(4) The net in-force movement over the year was $5,736 million, reflecting expected growth in insurance contract liabilities in all three divisions. This was largely offset in the U.S. and Canada by changes in interest rates and the resulting impact on the fair value of assets which back those policy liabilities.

(5) See Financial Performance – Impact of Fair Value Accounting above.

(6) The increase in policy liabilities from currency impact reflects the depreciation of the Canadian dollar relative to the U.S. dollar, Hong Kong dollar and Japanese yen. To the extent assets are currency matched to liabilities, the increase in insurance contract liabilities due to currency impact is offset by a corresponding increase from currency impact in the value of assets supporting those liabilities.

Consolidation

The Company is required to consolidate the financial position and results of entities it controls. Control exists when the Company:

- has the power to govern the financial and operating policies of the entity;
- is exposed to a significant portion of the entity's variable returns; and
- is able to use its power to influence variable returns from the entity.

The Company uses the same principles to assess control over any entity it is involved with. In evaluating control, potential factors assessed include the effects of:

- substantive potential voting rights that are currently exercisable or convertible;
- contractual management relationships with the entity;
- rights and obligations resulting from policyholders to manage investments on their behalf; and
- the effect of any legal or contractual restraints on the Company from using its power to affect its variable returns from the entity.

An assessment of control is based on arrangements in place and the assessed risk exposures at inception. Initial evaluations are reconsidered at a later date if:

- the Company acquires additional interests in the entity or its interests in an entity are diluted;
- the contractual arrangements of the entity are amended such that the Company's involvement with the entity changes; or
- the Company's ability to use its power to affect its variable returns from the entity changes.

Subsidiaries are consolidated from the date on which control is obtained by the Company and cease to be consolidated from the date that control ceases.

Fair Value of Invested Assets

A large portion of the Company's invested assets are recorded at fair value. Refer to note 1 to the 2016 Consolidated Financial Statements for a description of the methods used in determining fair values. When quoted prices in active markets are not available for a particular investment, significant judgment is required to determine an estimated fair value based on market standard valuation methodologies including discounted cash flow methodologies, matrix pricing, consensus pricing services, or other similar techniques. The inputs to these market standard valuation methodologies include: current interest rates or yields for similar instruments, credit rating of the issuer or counterparty, industry sector of the issuer, coupon rate, call provisions, sinking fund requirements, tenor (or expected tenor) of the instrument, management's assumptions regarding liquidity, volatilities and estimated future cash flows. Accordingly, the estimated fair values are based on available market information and management's judgments about the key market factors impacting these financial instruments. Financial markets are susceptible to severe events evidenced by rapid depreciation in asset values accompanied by a reduction in asset liquidity. The Company's ability to sell assets, or the price ultimately realized for these assets, depends upon the demand and liquidity in the market and increases the use of judgment in determining the estimated fair value of certain assets.

Evaluation of Invested Asset Impairment

AFS fixed income and equity securities are carried at fair market value, with changes in fair value recorded in Other Comprehensive Income ("OCI") with the exception of unrealized gains and losses on foreign currency translation of AFS fixed income securities which are included in net income attributed to shareholders. Securities are reviewed on a regular basis and any fair value decrement is transferred out of Accumulated Other Comprehensive Income ("AOCI") and recorded in net income attributed to shareholders when it is deemed probable that the Company will not be able to collect all amounts due according to the contractual terms of a fixed income security or when fair value of an equity security has declined significantly below cost or for a prolonged period of time.

Provisions for impairments of mortgage loans and private placement loans are recorded with losses reported in earnings when there is no longer reasonable assurance as to the timely collection of the full amount of the principal and interest.

Significant judgment is required in assessing whether an impairment has occurred and in assessing fair values and recoverable values. Key matters considered include economic factors, Company and industry specific developments, and specific issues with respect to single issuers and borrowers.

Changes in circumstances may cause future assessments of asset impairment to be materially different from current assessments, which could require additional provisions for impairment. Additional information on the process and methodology for determining the allowance for credit losses is included in the discussion of credit risk in note 10 to the 2016 Consolidated Financial Statements.

Derivative Financial Instruments

The Company uses derivative financial instruments ("derivatives") including swaps, forwards and futures agreements, and options to help manage current and anticipated exposures to changes in interest rates, foreign exchange rates, commodity prices and equity market prices, and to replicate permissible investments. Refer to note 5 to the 2016 Consolidated Financial Statements for a description of the methods used to determine the fair value of derivatives.

The accounting for derivatives is complex and interpretations of the primary accounting guidance continue to evolve in practice. Judgment is applied in determining the availability and application of hedge accounting designations and the appropriate accounting treatment under such accounting guidance. Differences in judgment as to the availability and application of hedge accounting designations and the appropriate accounting treatment may result in a differing impact on the Consolidated Financial Statements of the Company from that previously reported. Assessments of hedge effectiveness and measurements of ineffectiveness of hedging relationships are also subject to interpretations and estimations. If it was determined that hedge accounting designations were not appropriately applied, reported net income attributed to shareholders could be materially affected.

Employee Future Benefits

The Company maintains defined contribution and defined benefit pension plans and other post-employment plans for employees and agents, including registered (tax qualified) pension plans that are typically funded, as well as supplemental non-registered (non-qualified) pension plans for executives, retiree welfare plans and disability welfare plans that are typically not funded. The largest of the defined benefit pension and retiree welfare plans in the U.S. and Canada are the material plans that are discussed herein and that are the subject of the disclosures in note 16 to the 2016 Consolidated Financial Statements.

Due to the long-term nature of defined benefit pension and retiree welfare plans, the calculation of the defined benefit obligation and net benefit cost depends on various assumptions such as discount rates, salary increase rates, cash balance interest crediting rates, health care cost trend rates and rates of mortality. These assumptions are determined by management and are reviewed annually. Changes in assumptions and differences between actual and expected experience give rise to actuarial gains and losses that affect the amount of the defined benefit obligation and other comprehensive income ("OCI"). During 2016, the actual experience resulted in a gain of $136 million (2015 – gain of $39 million) for the defined benefit pension plans and a gain of $6 million (2015 – gain of $5 million) for the retiree welfare plans. These gains were fully recognized in OCI in 2016. The key assumptions, as well as the sensitivity of the defined benefit obligation to changes in these assumptions, are presented in note 16 to the 2016 Consolidated Financial Statements.

Contributions to the registered (tax qualified) defined benefit pension plans are made in accordance with the applicable U.S. and Canadian regulations. During 2016, the Company contributed $42 million (2015 – $46 million) to these plans. As at December 31, 2016, the difference between the fair value of assets and the defined benefit obligation for these plans was a surplus of $292 million (2015 – surplus of $133 million). For 2017, the contributions to the plans are expected to be approximately $33 million.

The Company's supplemental pension plans for executives are not funded; benefits under these plans are paid as they become due. During 2016, the Company paid benefits of $65 million (2015 – $73 million) under these plans. As at December 31, 2016, the defined benefit obligation for these plans amounted to $782 million (2015 – $834 million).

The Company's retiree welfare plans are partially funded, although there are no regulations or laws governing or requiring the funding of these plans. As at December 31, 2016, the difference between the fair value of plan assets and the defined benefit obligation for these plans was a deficit of $79 million (2015 – deficit of $78 million).

Income Taxes

The Company is subject to income tax laws in various jurisdictions. Tax laws are complex and potentially subject to different interpretations by the taxpayer and the relevant tax authority. The provision for income taxes represents management's interpretation of the relevant tax laws and its estimate of current and future income tax implications of the transactions and events during the period. A deferred tax asset or liability results from temporary differences between carrying values of the assets and liabilities and their respective tax basis. Deferred tax assets and liabilities are recorded based on expected future tax rates and management's assumptions regarding the expected timing of the reversal of such temporary differences. The realization of deferred tax assets depends upon the existence of sufficient taxable income within the carryback or carry forward periods under the tax law in the applicable tax jurisdiction. A deferred tax asset is recognized to the extent that future realization of the tax benefit is probable. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the tax benefit will be realized. Factors in management's determination include, among other things, the following:

- future taxable income exclusive of reversing temporary differences and carry forwards;
- future reversals of existing taxable temporary differences;
- taxable income in prior carryback years; and
- tax planning strategies.

The Company may be required to change its provision for income taxes if the ultimate deductibility of certain items is successfully challenged by taxing authorities or if estimates used in determining the amount of deferred tax assets to recognize change significantly, or when receipt of new information indicates the need for adjustment in the recognition of deferred tax assets. Additionally, future events, such as changes in tax laws, tax regulations, or interpretations of such laws or regulations, could have an impact on the provision for income tax, deferred tax balances, actuarial liabilities (see "Critical Accounting and Actuarial Policies – Expenses and Taxes" above) and the effective tax rate. Any such changes could significantly affect the amounts reported in the Consolidated Financial Statements in the year these changes occur.

Goodwill and Intangible Assets

Under IFRS, goodwill is tested at the cash generating unit level ("CGU") or group of CGUs level. A CGU comprises the smallest group of assets that are capable of generating largely independent cash flows and is either a business segment or a level below. The tests performed in 2016 demonstrated that there was no impairment of goodwill or intangible assets with indefinite lives. Changes in discount rates and cash flow projections used in the determination of embedded values or reductions in market-based earnings multiples may result in impairment charges in the future, which could be material.

Impairment charges could occur in the future as a result of changes in economic conditions. The goodwill testing for 2017 will be updated based on the conditions that exist in 2017 and may result in impairment charges, which could be material.

In 2016, we reported a $97 million charge to write-off a finite intangible asset related to our John Hancock Long Term Care ("JH LTC") distribution network.

Future Accounting and Reporting Changes

There are a number of new accounting and reporting changes issued under IFRS including those still under development by the International Accounting Standards Board ("IASB") that will impact the Company beginning in 2016. Summaries of each of the most recently issued key accounting standards are presented below.

(a) Changes effective in 2016

(I) Amendments to IAS 16 "Property, Plant and Equipment" and IAS 38 "Intangible Assets"

Effective January 1, 2016, the Company adopted the amendments issued to IAS 16 "Property, Plant and Equipment" and IAS 38 "Intangible Assets" which were issued in May 2014. These amendments were applied prospectively. The amendments clarified that depreciation or amortization of assets accounted for under these two standards should reflect a pattern of consumption of the assets rather than reflect economic benefits expected to be generated from the assets. Adoption of these amendments did not have a significant impact on the Company's Consolidated Financial Statements.

(II) Amendments to IAS 41 "Agriculture" and IAS 16 "Property, Plant and Equipment"

Effective January 1, 2016, the Company adopted the amendments to IAS 41 "Agriculture" and IAS 16 "Property, Plant and Equipment" which were issued in June 2014. These amendments were applied retrospectively. These amendments require that "bearer plants" (that is, plants used in the production of agricultural produce and not intended to be sold as a living plant except for incidental scrap sales) should be considered as property, plant and equipment in the scope of IAS 16 and should be measured either at cost or revalued amount with changes recognized in OCI. Previously these plants were in the scope of IAS 41 and were measured at fair value less cost to sell. These amendments only apply to the accounting requirements of a bearer plant and not agricultural land properties. The Company chose to carry bearer plants at cost. Adoption of these amendments did not have a significant impact on the Company's Consolidated Financial Statements.

(III) Amendments to IFRS 10 "Consolidated Financial Statements", IFRS 12 "Disclosure of Interests in Other Entities", and IAS 28 "Investments in Associates and Joint Ventures"

Effective January 1, 2016, the Company adopted amendments to IFRS 10 "Consolidated Financial Statements", IFRS 12 "Disclosure of Interests in Other Entities", and IAS 28 "Investments in Associates and Joint Ventures" which were issued in December 2014. These amendments were applied retrospectively. The amendments clarify the requirements when applying the investment entities consolidation exception. Adoption of these amendments did not have a significant impact on the Company's Consolidated Financial Statements.

(b) Accounting and reporting changes issued with an effective date later than 2016

(I) Annual Improvements 2014-2016 Cycle

Annual Improvements 2014-2016 Cycle were issued in December 2016 resulting in minor amendments to three standards and are effective for the Company starting January 1, 2017. The Company is assessing the impact of these amendments.

(II) IFRS 16 "Leases"

IFRS 16 "Leases" was issued in January 2016 and is effective for years beginning on or after January 1, 2019, to be applied retrospectively or on a modified retrospective basis. It will replace IAS 17 "Leases" and IFRIC 4 "Determining whether an arrangement contains a lease". IFRS 16 sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract, the customer ("lessee") and the supplier ("lessor"). The standard brings most leases on-balance sheet for lessees under a single model, eliminating the previous classifications of operating and finance leases. Exemptions to this treatment are for lease contracts with low value assets or leases with duration less than one year. The on-balance sheet treatment will result in the grossing up of the balance sheet due to right-of-use assets being recognized with offsetting liabilities. Lessor accounting will remain largely unchanged with previous classifications of operating and finance leases being maintained. The Company is assessing the impact of this standard.

(III) Amendments to IAS 7 "Statement of Cash Flows"

Amendments to IAS 7 "Statement of Cash Flows" were issued in January 2016 and are effective for annual periods beginning on or after January 1, 2017, to be applied prospectively. These amendments require companies to provide information about changes in their financing liabilities. Adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(IV) IFRIC 22 Foreign Currency Transactions and Advance Consideration

IFRIC 22 "Foreign Currency Transactions and Advance Consideration" was issued in December 2016, will be effective for annual periods beginning on or after January 1, 2018 and may be applied retrospectively or prospectively. IFRIC 22 addresses which foreign exchange rate to use to measure a foreign currency transaction when advance payments are made or received and non-monetary assets or liabilities are recognized prior to recognition of the underlying transaction. IFRIC 22 does not relate to goods or services accounted for at fair value or at the fair value of consideration paid or received at a date other than the date of initial recognition of the non-monetary asset or liability, or to income taxes, insurance contracts or reinsurance contracts. The foreign exchange rate on the day of the advance payment is used to measure the foreign currency transaction. If multiple advance payments are made or received, each payment is measured separately. The Company is assessing the impact of this standard.

(V) IFRS 9 "Financial Instruments"

IFRS 9 "Financial Instruments" was issued in November 2009 and amended in October 2010, November 2013 and July 2014, and is effective for years beginning on or after January 1, 2018, to be applied retrospectively, or on a modified retrospective basis. It is intended to replace IAS 39 "Financial Instruments: Recognition and Measurement".

The project has been divided into three phases: classification and measurement, impairment of financial assets, and hedge accounting. IFRS 9's current classification and measurement methodology provides that financial assets are measured at either amortized cost or fair value on the basis of the entity's business model for managing the financial assets and the contractual cash flow characteristics of the financial assets. The classification and measurement for financial liabilities remains generally unchanged; however, for a financial liability designated as at fair value through profit or loss, revisions have been made in the accounting for changes in fair value attributable to changes in the credit risk of that liability. Gains or losses caused by changes in an entity's own credit risk on such liabilities are no longer recognized in profit or loss but instead are reflected in OCI.

Revisions to hedge accounting were issued in November 2013 as part of the overall IFRS 9 project. The amendment introduces a new hedge accounting model, together with corresponding disclosures about risk management activity for those applying hedge accounting. The new model represents a substantial overhaul of hedge accounting that will enable entities to better reflect their risk management activities in their financial statements.

Revisions issued in July 2014 replace the existing incurred loss model used for measuring the allowance for credit losses with an expected loss model. Changes were also made to the existing classification and measurement model designed primarily to address specific application issues raised by early adopters of the standard. They also address the income statement accounting mismatches and short-term volatility issues which have been identified as a result of the insurance contracts project.

The Company expects to defer IFRS 9 until January 1, 2021 as allowed under the amendments to IFRS 4 "Insurance Contracts" outlined below.

(VI) Amendments to IFRS 4 "Insurance Contracts"

Amendments to IFRS 4 "Insurance Contracts" were issued in September 2016, which will be effective for annual periods beginning on or after January 1, 2018. The amendments introduce two approaches to address the concerns about the differing effective dates of IFRS 9 "Financial Instruments" and the forthcoming new insurance contracts standard: the overlay approach and the deferral approach. The overlay approach provides an option for all issuers of insurance contracts to adjust profit or loss for eligible financial assets by removing any additional accounting volatility that may arise from applying IFRS 9 before the new insurance contracts standard. The deferral approach provides companies whose activities are predominantly related to insurance an optional temporary exemption from applying IFRS 9 until January 1, 2021. The Company expects to defer IFRS 9 until January 1, 2021.

(VII) Amendments to IAS 12 "Income Taxes"

Amendments to IAS 12 "Income Taxes" were issued in January 2016 are effective for years beginning on or after January 1, 2017 and to be applied retrospectively. The amendments clarify recognition of deferred tax assets relating to unrealized losses on debt instruments measured at fair value. A deductible temporary difference arises when the carrying amount of the debt instrument measured at fair value is less than the cost for tax purposes, irrespective of whether the debt instrument is held for sale or held to maturity. The recognition of the deferred tax asset that arises from this deductible temporary difference is considered in combination with other deferred taxes applying local tax law restrictions where applicable. In addition, when estimating future taxable profits, consideration can be given to recovering more than the asset's carrying amount where probable. Adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(VIII) Amendments to IFRS 2 "Share-Based Payment"

Amendments to IFRS 2 "Share-Based Payment" were issued in June 2016, and are effective for annual periods beginning on or after January 1, 2018. The amendments clarify the effects of vesting and non-vesting conditions on the measurement of cash-settled share-based payments; provide guidance on the classification of share-based payment transactions with net settlement features for withholding tax obligations; and clarify accounting for modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. Adoption of these amendments is not expected to have a significant impact on the Company's Consolidated Financial Statements.

(IX) Amendments to IFRS 15 "Revenue from Contracts with Customers"

In May 2014, IFRS 15 "Revenue from Contracts with Customers" was issued, and replaces IAS 11 "Construction Contracts," IAS 18 "Revenue" and several interpretations. Amendments to IFRS 15 were issued in April 2016. IFRS 15 as amended is effective for annual periods beginning on or after January 1, 2018, to be applied as described below.

IFRS 15 clarifies revenue recognition principles, provides a robust framework for recognizing revenue and cash flows arising from contracts with customers and enhances qualitative and quantitative disclosure requirements. IFRS 15 does not apply to insurance contracts, financial instruments and lease contracts. Accordingly, the adoption of IFRS 15 may impact the revenue recognition related to the Company's asset management and service contracts and may result in additional financial statement disclosure.

The amendments clarify when a promised good or service is separately identifiable from other promises in a contract; provide clarifications on how to apply the principal versus agent application guidance; and provide clarifications on how an entity will evaluate the nature of a promise to grant a license of intellectual property to determine whether the promise is satisfied over time or at a point in time.

The amendments provide two practical expedients to alleviate transition burden. An entity that uses the full retrospective approach may apply IFRS 15 only to contracts that are not completed as at the beginning of the earliest period presented. An entity may determine the aggregate effect of all of the modifications that occurred between contract inception and the earliest date presented, rather than accounting for the effects of each modification separately. The Company is assessing the impact of this standard.

Differences between IFRS and Hong Kong Financial Reporting Standards

Manulife's Consolidated Financial Statements are presented in accordance with IFRS. IFRS differs in certain respects from Hong Kong Financial Reporting Standards ("HKFRS"). Until IFRS 17 "Insurance Contracts" is issued and becomes effective, IFRS 4 "Insurance Contracts" permits the use of the insurance standard in effect at the time an issuer adopts IFRS. IFRS insurance contract liabilities are valued in Canada under standards established by the Canadian Actuarial Standards Board. In certain interest rate environments, insurance contract liabilities determined in accordance with HKFRS may be higher than those computed in accordance with current IFRS.

IFRS and Hong Kong Regulatory Requirements

Insurers in Hong Kong are required by the Office of the Commissioner of Insurance to meet minimum solvency requirements. As at December 31, 2016, the Company's business that falls within the scope of these requirements has sufficient assets to meet the minimum solvency requirements under both Hong Kong regulatory requirements and IFRS.

Risk Factors

Our insurance, wealth and asset management and other financial services businesses subject Manulife to a broad range of risks. Management has identified the following risks and uncertainties to which our businesses, operations and financial condition are subject. The risks and uncertainties described below are not the only ones facing us. Additional risks not presently known to us or that we currently deem immaterial could also impair our businesses, operations and financial condition. If any of such risks should occur, the trading price of our securities, including common shares, preferred shares and debt securities, could decline, and you may lose all or part of your investment.

Strategic Risk Factors

We operate in highly competitive markets and compete for customers with both insurance and non-insurance financial services companies. Customer loyalty and retention, and access to distributors, are important to the Company's success and are influenced by many factors, including our distribution practices and regulations, product features, service levels, prices, and our financial strength ratings and reputation.

We may not be successful in executing our business strategies or these strategies may not achieve our objectives.

- Refer to "Risk Management – Strategic Risk" above.
- The economic environment could be volatile and our regulatory environment will continue to evolve, potentially with higher capital requirements which could materially impact our competitiveness. Further, the attractiveness of our product offerings relative to our competitors will be influenced by competitor actions as well as our own, and the requirements of the applicable regulatory regimes. For these and other reasons, there is no certainty that we will be successful in implementing our business strategies or that these strategies will achieve the objectives we target.
- Macro-economic factors may result in our inability to achieve business strategies and plans. Of note, economic factors such as flat or declining equity markets, equity market volatility, or a period of prolonged low interest rates could impact our ability to achieve business objectives. Other factors, such as management actions taken to bolster capital and manage the Company's risk profile, including new or amended reinsurance agreements, and additional actions that the Company may take to help manage near-term regulatory capital ratios or help mitigate equity market and interest rate exposures, could adversely impact our longer term earnings potential.

Our insurance businesses are heavily regulated, and changes in regulation may reduce our profitability and limit our growth.

- Our insurance operations are subject to a wide variety of insurance and other laws and regulations. Insurance and securities regulators in Canada, the United States, Asia and other jurisdictions regularly re-examine existing laws and regulations applicable to insurance companies, investment advisors, brokers-dealers and their products. Compliance with applicable laws and regulations is time consuming and personnel-intensive, and changes in these laws and regulations or in the interpretation or enforcement thereof, may materially increase our direct and indirect compliance costs and other expenses of doing business, thus having a material adverse effect on our results of operations and financial condition.
- In addition, international regulators as well as domestic financial authorities and regulators in many countries have been reviewing their capital requirements and are implementing, or are considering implementing, changes aimed at strengthening risk management and capitalization of financial institutions. Future regulatory capital, actuarial and accounting changes, including changes with a retroactive impact, could have a material adverse effect on the Company's consolidated financial condition, results of operations and regulatory capital both on transition and going forward. In addition, such changes could have a material adverse effect on the Company's position relative to that of other Canadian and international financial institutions with which Manulife competes for business and capital. See "Risk Management – Regulatory Updates" section above for changes related to a revised regulatory capital framework in Canada effective 2018.
- In Canada, MFC and its principal operating subsidiary, MLI, are governed by the Insurance Companies Act (Canada)("ICA"). The ICA is administered, and the activities of the Company are supervised, by the Office of the Superintendent of Financial Institutions ("OSFI"). MLI is also subject to regulation and supervision under the insurance laws of each of the provinces and territories of Canada. Regulatory oversight is vested in various governmental agencies having broad administrative power with respect to, among other things, dividend payments, capital adequacy and risk-based capital requirements, asset and reserve valuation requirements, permitted investments and the sale and marketing of insurance contracts. These regulations are intended to protect policyholders and beneficiaries rather than investors and may adversely impact shareholder value.
- Some recent examples of regulatory and professional standard developments which could impact our net income attributed to shareholders and/or capital position are provided below.
    - The International Accounting Standards Board ("IASB") issued an exposure draft of new accounting standard for insurance contracts in June 2013. The standard is expected to be issued in 2017 with an effective date of 2021. For further discussion on the IASB exposure draft, refer to the risk factor entitled "International Financial Reporting Standards will have a material impact on our financial results".
    - As outlined in the "Risk Management – Regulatory Updates" section above, OSFI will be implementing a revised approach to the regulatory capital framework in Canada to come into effect in 2018. The development of a new required capital framework for segregated funds (variable annuities) is progressing separately and will have a later implementation date. In addition, OSFI is considering stand-alone capital requirements for Canadian operating life insurance companies, such as MLI.

- In 2013, the International Association of Insurance Supervisors ("IAIS") committed to the completion of several capital initiatives that would apply to select global insurance groups to reflect their systemic importance to the international financial system, including Basic Capital Requirements introduced in 2015, and the Higher Loss Absorbency requirements to be implemented in 2019. The most relevant for the Company is the IAIS plan to adopt a global Insurance Capital Standard in 2019 that will apply to all large internationally active insurance groups. It is not yet known how the proposals will affect capital requirements and the competitive position of the Company. In addition, IAIS designates annually a group of Global Systemically Important Insurers ("GSII") that are subject to incremental capital and oversight requirements. While Manulife was not named a GSII in the past, there remains a risk of such a designation.
- The National Association of Insurance Commissioners ("NAIC") has been reviewing reserving and capital methodologies as well as the overall risk management framework. These reviews will affect U.S. life insurers, including John Hancock, and could lead to increased reserving and/or capital requirements for our business in the United States. In addition, the NAIC is continuing to explore the development of a group capital calculation tool; however, the scope of any such tool has not yet been determined.

- The Actuarial Standards Board ("ASB") promulgates Mortality improvement rates and the Ultimate Reinvestment Rate ("URR") referenced in the CIA Standards of Practice for the valuation of insurance contract liabilities. These promulgations are updated periodically and both are expected to be updated in 2017. In the event that new promulgations are published, they will apply to the determination of actuarial liabilities and both may lead to a material increase in actuarial liabilities and a reduction in net income attributed to shareholders. In 2016, the Company updated economic reinvestment assumptions for risk-free rates used in the valuation of policy liabilities which included a proactive 10 basis point reduction to our URR assumptions and a commensurate change in our calibration criteria for stochastic risk-free rates. If required, we will make further updates to our economic reinvestment assumptions in 2017.
- In the United States, state insurance laws regulate most aspects of our business, and our U.S. insurance subsidiaries are regulated by the insurance departments of the states in which they are domiciled and the states in which they are licensed. State laws grant insurance regulatory authorities broad administrative powers with respect to, among other things: licensing companies and agents to transact business; calculating the value of assets to determine compliance with statutory requirements; mandating certain insurance benefits; regulating certain premium rates; reviewing and approving policy forms; regulating unfair trade and claims practices, including through the imposition of restrictions on marketing and sales practices, distribution arrangements and payment of inducements; regulating advertising; protecting privacy; establishing statutory capital and reserve requirements and solvency standards; fixing maximum interest rates on insurance policy loans and minimum rates for guaranteed crediting rates on life insurance policies and annuity contracts; approving changes in control of insurance companies; restricting the payment of dividends and other transactions between affiliates; and regulating the types, amounts and valuation of investments. Changes in any such laws and regulations, or in the interpretation or enforcement thereof by regulators, could significantly affect our business, results of operations and financial condition.
- Currently, the U.S. federal government does not directly regulate the business of insurance. However, federal legislation and administrative policies in several areas can significantly and adversely affect state regulated insurance companies. These areas include financial services regulation, securities regulation, pension regulation, privacy, tort reform legislation and taxation. In addition, under the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank"), the U.S. Board of Governors of the Federal Reserve has supervisory powers over non-bank financial companies that are determined to be systemically important, including certain insurance companies. For further discussion on Dodd-Frank, refer to the risk factor entitled "Dodd-Frank could adversely impact our results of operations and our liquidity".
- Insurance guaranty associations in Canada and the United States have the right to assess insurance companies doing business in their jurisdiction for funds to help pay the obligations of insolvent insurance companies to policyholders and claimants. Because the amount and timing of an assessment is beyond our control, the liabilities that we have currently established for these potential liabilities may not be adequate.
- While many of the laws and regulations to which we are subject are intended to protect policyholders, beneficiaries, depositors and investors in our products and services, others also set standards and requirements for the governance of our operations. Failure to comply with applicable laws or regulations could result in financial penalties or sanctions, and damage our reputation.
- From time to time, regulators raise issues during examinations or audits of Manulife that could have a material adverse impact on us. We cannot predict whether or when regulatory actions may be taken that could adversely affect our operations. For further discussion of government regulation and legal proceedings refer to "Government Regulation" in MFC's Annual Information Form dated February 9, 2017 and "Legal and Regulatory Proceedings" below. Refer to the risk factor "Our non-North American operations face political, legal, operational and other risks that could negatively affect those operations or our results of operations and financial condition" for further discussion on the impact to our operations.

Dodd-Frank could adversely impact our results of operations and our liquidity.

- Dodd-Frank establishes a framework for regulation of over-the-counter ("OTC") derivatives which affects activities of the Company that use derivatives for various purposes, including hedging equity market, interest rate and foreign currency exposures. Regulations promulgated by the U.S. Commodities Futures Trading Commission and the U.S. Securities and Exchange Commission ("SEC") under Dodd-Frank require certain types of OTC derivative transactions to be executed through a centralized exchange or regulated facility and be cleared through a regulated clearinghouse. These rules impose additional costs on the Company.
- Derivative transactions executed through exchanges or regulated facilities attract incremental collateral requirements in the form of initial margin, and require variation margin to be cash settled on a daily basis which increases liquidity risk for the Company. The increase in margin requirements (relative to bilateral agreements) combined with a more restricted list of securities that qualify as eligible collateral requires us to hold larger positions in cash and treasuries, which could reduce net income attributed to shareholders.

- In-force OTC derivative transactions are grandfathered and will migrate to being cleared through exchanges over time, or the Company may elect to accelerate the migration. As such, this may not become a significant risk for Manulife until a large portion of our derivatives have transitioned to clearinghouses (expected in the 2019 to 2022 timeframe) and market conditions adverse to liquidity (material increases in interest rates and/or equity markets) have been experienced. However, in certain situations such as ratings downgrade, our counterparties may be able to accelerate the transition by exercising any potential rights to terminate the contract. Some OTC derivative contracts also give Manulife and its counterparties the right to cancel the contract after specific dates. Any such cancellation by our counterparties could accelerate the transition to clearing.
- Other jurisdictions in which Manulife operates in are expected to enact similar regulations within the next few years for cleared transactions as well as new upfront collateral and more restrictive collateral (relative to the current OTC market) to cover changes in derivative values for non-cleared transactions. We cannot predict the effect of the legislation on our hedging costs, our hedging strategy or its implementation, or whether Dodd-Frank and similar regulations in other jurisdictions will lead to an increase or decrease in or change in composition of the risks we seek to hedge.

International Financial Reporting Standards will have a material impact on our financial results.

- The IASB has stated that it expects to issue a new accounting standard for insurance contracts in 2017, with an effective date of 2021. Until this standard is completed and becomes effective, IFRS does not currently prescribe an insurance contract measurement model and therefore, as permitted by IFRS 4 “Insurance Contracts”, insurance contract liabilities continue to be measured using CALM. Under CALM, the measurement of actuarial liabilities is based on projected liability cash flows, together with estimated future premiums and net investment income generated from assets held to support those liabilities.
- This new standard will build upon an exposure draft of a new accounting standard for insurance contracts that the IASB issued in June 2013. The comment period on that exposure draft ended on October 25, 2013. We, along with other international companies in the industry, provided feedback on the significant issues we identified in relation to that exposure draft. This was supported by comprehensive field testing of the proposal within the exposure draft response period, results of which were shared with the IASB.
- As drafted in 2013, the standard would create material volatility in our financial results and capital position; and could result in a lower discount rate used for the determination of actuarial liabilities, thereby increasing our actuarial liabilities and reducing our equity. The Company’s capital position (see note below) and income for accounting purposes could be highly correlated to prevailing market conditions, resulting in material volatility of reported results, that may necessitate changes to business strategies. Note: The regulatory capital framework in Canada is currently aligned with IFRS. In Canada, OSFI will decide on the appropriate recognition of the accounting outcomes within the regulatory capital framework.
- Additionally, other jurisdictions may not adopt the standard as issued or on the same timeline as published by the IASB, and there is a possibility that Canada will be the first to adopt the standard. Adopting the standard in Canada before it is adopted elsewhere could increase our cost of capital compared with global competitors and the banking sector in Canada.
- Any mismatch between the underlying economics of our business and the new accounting standard could have significant unintended negative consequences on our business model; and potentially affect our customers, shareholders and the capital markets.

Changes in tax laws, tax regulations, or interpretations of such laws or regulations could make some of our products less attractive to consumers, could increase our corporate taxes or cause us to change the value of our deferred tax assets and liabilities as well as our tax assumptions included in the valuation of our policy liabilities. This could have a material adverse effect on our business, results of operations and financial condition.

- Many of the products that the Company sells benefit from one or more forms of preferred tax treatment under current income tax regimes. For example, the Company sells life insurance policies that benefit from the deferral or elimination of taxation on earnings accrued under the policy, as well as permanent exclusion of certain death benefits that may be paid to policyholders’ beneficiaries. We also sell annuity contracts that allow the policyholders to defer the recognition of taxable income earned within the contract. Other products that the Company sells, such as certain employer-paid health and dental plans, also enjoy similar, as well as other, types of tax advantages. The Company also benefits from certain tax benefits, including tax-exempt interest, dividends-received deductions, tax credits (such as foreign tax credits), and favourable tax rates and/or income measurement rules for tax purposes.
- There is risk that tax legislation could be enacted that would lessen or eliminate some or all of the tax advantages currently benefiting the Company or its policyholders or its other clients. This could occur in the context of deficit reduction or other tax reforms. The effects of any such changes could result in materially lower product sales, lapses of policies currently held, and/or our incurrence of materially higher corporate taxes, any of which could have a material adverse effect on our business, results of operations and financial condition.
- Additionally, the Company may be required to change its provision for income taxes or carrying amount of deferred tax assets or liabilities if the characterization of certain items is successfully challenged by taxing authorities or if future transactions or events, which could include changes in tax laws, tax regulations or interpretations of such laws or regulations, occur. Any such changes could significantly affect the amounts reported in the consolidated financial statements in the year these changes occur.
- Tax reform in the U.S. is a current topic. A reduction to the corporate tax rate would result in a write down in the value of our net deferred tax asset and change to our assumptions, followed by a reduction in our ongoing effective tax rate. We estimate that a 1% reduction in the U.S. corporate tax rate would result in a one-time charge of approximately US$60 million related to our net deferred tax asset position and assumptions in our policy liabilities and an annual benefit to tax expense reported in core earnings of US$15 million. Other tax reform changes could reduce or eliminate the annual benefit of the lower rate.

Access to capital may be negatively impacted by market conditions.

- Disruptions, uncertainty or volatility in the financial markets may limit our access to capital required to operate our business. Such market conditions may limit our ability to satisfy regulatory capital requirements, to access the capital necessary to grow our business and meet our refinancing requirements. Under extreme conditions, we may be forced, among other things, to delay raising capital, issue different types of capital than we would otherwise, less effectively deploy such capital, issue shorter term securities than we prefer, or issue securities that bear an unattractive cost of capital which could decrease our profitability, dilute our existing shareholders, and significantly reduce our financial flexibility.

We may experience future downgrades in our financial strength or credit ratings, which may materially adversely impact our financial condition and results of operations.

- Credit rating agencies publish financial strength ratings on life insurance companies that are indicators of an insurance company's ability to meet contract holder and policyholder obligations. Credit rating agencies also assign credit ratings, which are indicators of an issuer's ability to meet the terms of its obligations in a timely manner, and are important factors in a company's overall funding profile and ability to access external capital.
- Ratings are important factors in establishing the competitive position of insurance companies, maintaining public confidence in products being offered, and determining the cost of capital. A ratings downgrade, or the potential for such a downgrade could, among other things: increase our cost of capital and limit our access to the capital markets; cause some of our existing liabilities to be subject to acceleration, additional collateral support, changes in terms, or additional financial obligations; result in the termination of our relationships with broker-dealers, banks, agents, wholesalers and other distributors of our products and services; unfavourably impact our ability to execute on our hedging strategies; materially increase the number of surrenders, for all or a portion of the net cash values, by the owners of policies, contracts and general account guaranteed interest contracts ("GICs") we have issued, and materially increase the number of withdrawals by policyholders of cash values from their policies; and reduce new sales, particularly with respect to general account GICs purchased by pension plans and other institutions. Any of these consequences could adversely affect our results of operations and financial condition.
- Credit rating agencies remain concerned with: our capital and net earnings volatility associated with fair-value accounting; net residual exposures to equity markets and lower interest rates; challenges associated with managing in-force long-term care, universal life with secondary guarantees and variable annuity products in the U.S. Some credit rating agencies also view our financial leverage and earnings coverage metrics as not meeting expectations. There can be no guarantee that downgrades will not occur.
- It is possible that there will be changes in the benchmarks for capital, liquidity, earnings and other factors used by these credit rating agencies that are important to a ratings assignment at a particular rating level. Any such changes could have a negative impact on our ratings, which could adversely impact our results of operations, financial condition and access to capital markets.

Competitive factors may adversely affect our market share and profitability.

- The insurance, wealth and asset management industries are highly competitive. Our competitors include other insurers, securities firms, investment advisors, mutual funds, banks and other financial institutions. Our competitors compete with us for customers, access to distribution channels such as brokers and independent agents, and for employees. In some cases, competitors may be subject to less onerous regulatory requirements, have lower operating costs or have the ability to absorb greater risk while maintaining their financial strength ratings, thereby allowing them to price their products more competitively or offer features that make their products more attractive. These competitive pressures could result in increased pricing pressures on a number of our products and services and may harm our ability to maintain or increase our profitability. Because of the highly competitive nature of the financial services industry, there can be no assurance that we will continue to effectively compete with our industry rivals and competitive pressure may have a material adverse effect on our business, results of operations and financial condition.

We may experience difficulty in marketing and distributing products through our current and future distribution channels.

- We distribute our insurance and wealth management products through a variety of distribution channels, including brokers, independent agents, broker-dealers, banks, wholesalers, affinity partners, other third-party organizations and our own sales force in Asia. We generate a significant portion of our business through individual third-party arrangements. We periodically negotiate provisions and renewals of these relationships, and there can be no assurance that such terms will remain acceptable to us or relevant third parties. An interruption in our continuing relationship with certain of these third parties could significantly affect our ability to market our products and could have a material adverse effect on our business, results of operations and financial condition.

Industry trends could adversely affect the profitability of our businesses.

- Our business segments continue to be influenced by a variety of trends that affect our business and the financial services industry in general. The impact of the volatility and instability of the financial markets on our business is difficult to predict. The Company's business plans, financial condition and results of operations have been, in the recent past, and may in the future, be negatively impacted or affected.

We may face unforeseen liabilities or asset impairments arising from possible acquisitions and dispositions of businesses or difficulties integrating acquired businesses.

- We have engaged in acquisitions and dispositions of businesses in the past, and expect to continue to do so in the future as we may deem appropriate. There could be unforeseen liabilities or asset impairments, including goodwill impairments that arise in connection with the businesses that we may sell, have acquired, or may acquire in the future. In addition, there may be liabilities or asset impairments that we fail, or are unable, to discover in the course of performing due diligence investigations on acquisition targets. Furthermore, the use of our own funds as consideration in any acquisition would consume capital resources that would no longer be available for other corporate purposes.
- Our ability to achieve some or all of the benefits we anticipate from any acquisitions of businesses will depend in large part upon our ability to successfully integrate the businesses in an efficient and effective manner. We may not be able to integrate the businesses smoothly or successfully, and the process may take longer than expected. The integration of operations may require the dedication of significant management resources, which may distract management's attention from our day-to-day business. Acquisitions of operations outside of North America, especially any acquisition in a jurisdiction in which we do not currently operate, may be particularly challenging or costly to integrate. If we are unable to successfully integrate the operations of any acquired businesses, we may be unable to realize the benefits we expect to achieve as a result of the acquisitions and the results of operations may be less than expected.

If our businesses do not perform well, or if the outlook for our businesses is significantly lower than historical trends, we may be required to recognize an impairment of goodwill or intangible assets or to establish a valuation allowance against our deferred tax assets, which could have a material adverse effect on our results of operations and financial condition.

- Goodwill represents the excess of the amounts we paid to acquire subsidiaries and other businesses over the fair value of their net identifiable assets at the date of acquisition. Intangible assets represent assets that are separately identifiable at the time of an acquisition and provide future benefits such as the John Hancock brand.
- Goodwill and intangible assets with indefinite lives are tested at least annually for impairment. Goodwill is tested at the cash generating unit ("CGU") or group of CGUs level, representing the smallest group of assets that is capable of generating largely independent cash flows. The Company completed its 2016 goodwill and intangible asset tests in the fourth quarter of 2016, and as a result, management concluded that there was no impairment of goodwill or intangible assets with indefinite lives. Going forward, as a result of the impact of economic conditions and changes in product mix and the granular level of goodwill testing under IFRS, additional impairment charges could occur in the future.
- At December 31, 2016, under IFRS we had $5,884 million of goodwill and $4,223 million of intangible assets.
- If market conditions deteriorate in the future and, in particular, if MFC's common share price is low relative to book value per share, if the Company's actions to limit risk associated with its products or investments cause a significant change in any one CGU's recoverable amount, or if the outlook for a CGU's results deteriorate, the Company may need to reassess the value of goodwill and/or intangible assets which could result in impairments during 2017 or subsequent periods. Such impairments could have a material adverse effect on our results of operations and financial condition.
- Deferred income tax balances represent the expected future tax effects of the differences between the book and tax basis of assets and liabilities, loss carry forwards and tax credits. Deferred tax assets are recorded when the Company expects to claim deductions on tax returns in the future for expenses that have already been recorded in the financial statements.
- The availability of those deductions is dependent on future taxable income against which the deductions can be made. Deferred tax assets are assessed periodically by management to determine if they are realizable. Factors in management's determination include the performance of the business including the ability to generate gains from a variety of sources and tax planning strategies. If based on information available at the time of the assessment, it is determined that the deferred tax asset will not be realized, then the deferred tax asset is reduced to the extent that it is no longer probable that the tax benefit will be realized. At December 31, 2016, we had $4,439 million of deferred tax assets.

We may not be able to protect our intellectual property and may be subject to infringement claims.

- We rely on a combination of contractual rights and copyright, trademark, patent and trade secret laws to establish and protect our intellectual property. In particular, we have invested considerable resources in promoting the brand names "Manulife" and "John Hancock" and expect to continue to do so. Although we use a broad range of measures to protect our intellectual property rights, third parties may infringe or misappropriate our intellectual property. We may have to litigate to enforce and protect our copyrights, trademarks, patents, trade secrets and know-how or to determine their scope, validity or enforceability, which represents a diversion of resources that may be significant in amount and may not prove successful. The loss of intellectual property protection or the inability to secure or enforce the protection of our intellectual property assets could have a material adverse effect on our business and our ability to compete.
- We also may be subject to costly litigation in the event that another party alleges our operations or activities infringe upon its intellectual property rights. Third parties may have, or may eventually be issued, patents that could be infringed by our products, methods, processes or services. Any party that holds such a patent could make a claim of infringement against us. We may also be subject to claims by third parties for breach of copyright, trademark, trade secret or license usage rights. Any such claims and any resulting litigation could result in significant liability for damages. If we were found to have infringed a third-party patent or other intellectual property rights, we could incur substantial liability, and in some circumstances could be enjoined from providing certain products or services to our customers or utilizing and benefiting from certain methods, processes, copyrights, trademarks, trade

secrets or licenses, or alternatively could be required to enter into costly licensing arrangements with third parties, all of which could have a material adverse effect on our business, results of operations and financial condition.

Applicable laws may discourage takeovers and business combinations that common shareholders of MFC might consider in their best interests.

- The ICA contains restrictions on the purchase or other acquisition, issue, transfer and voting of the shares of an insurance company. In addition, under applicable U.S. insurance laws and regulations in states where certain of our insurance company subsidiaries are domiciled, no person may acquire control of MFC without obtaining prior approval of those states' insurance regulatory authorities. These restrictions may delay, defer, prevent, or render more difficult a takeover attempt that common shareholders of MFC might consider in their best interests. For instance, they may prevent shareholders of MFC from receiving the benefit from any premium to the market price of MFC's common shares offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of these provisions may adversely affect the prevailing market price of MFC's common shares if they are viewed as discouraging takeover attempts in the future.

Entities within the MFC Group are interconnected which may make separation difficult.

- MFC operates in local markets through subsidiaries and branches of subsidiaries. These local operations are financially and operationally interconnected to lessen expenses, share and reduce risk, and efficiently utilize financial resources. In general, external capital required for companies in the Manulife group has been raised at the MFC or MLI level and then transferred to other entities as equity or debt capital as appropriate. Other linkages include the use of loans, guarantees, capital maintenance agreements, derivatives, shared services and reinsurance. Accordingly, the risks undertaken by a subsidiary may be transferred to or shared by affiliates through financial and operational linkages. Some of the consequences of this are:
  - Financial difficulties at a subsidiary may not be isolated and could cause material adverse effects on affiliates and the group as a whole.
  - Linkages may make it difficult to dispose of or separate a subsidiary or business within the group by way of a spin-off or similar transaction and the disposition or separation of a subsidiary or business may not fully eliminate the liability of the Company and its remaining subsidiaries for shared risks. Issues raised by such a transaction could include, (i) MFC and its remaining subsidiaries may continue to have residual risk under guarantees and reinsurance arrangements that could not be terminated; (ii) internal capital mobility and efficiency could be limited; (iii) significant potential tax consequences; (iv) uncertainty about the accounting and regulatory outcomes of such a transaction; (v) there may be a requirement for significant capital injections; and (vi) the transaction may result in increased sensitivity of net income attributed to shareholders and capital of MFC and its remaining subsidiaries to market declines.

Market Risk Factors

Our most significant source of publicly traded equity risk arises from variable annuity and segregated funds with guarantees, where the guarantees are linked to the performance of the underlying funds.

- Publicly traded equity performance risk arises from a variety of sources, including guarantees associated with certain variable annuity and segregated fund products, asset based fees, and investments in publicly traded equities supporting both our general fund products and our surplus segment.
- Guaranteed benefits are contingent and payable upon death, maturity, permitted withdrawal or annuitization. If equity markets decline or even if they increase by an amount lower than that assumed in our actuarial valuation, additional liabilities may need to be established to cover the contingent liabilities, resulting in a reduction in net income attributed to shareholders and regulatory capital ratios. Further, if equity markets do not recover to the amount of the guarantees, by the dates the liabilities are due, the accrued liabilities will need to be paid out in cash. In addition, sustained flat or declining public equity markets would likely reduce asset based fee revenues related to variable annuities and segregated funds with guarantees and related to other wealth and insurance products.
- Where publicly traded equity investments are used to support policy liabilities, the policy valuation incorporates projected investment returns on these assets. If actual returns are lower than the expected returns, the Company's policy liabilities will increase, reducing net income attributed to shareholders.
- For products where the investment strategy applied to future cash flows in the policy valuation includes investing a specified portion of future cash flows in publicly traded equities, a decline in the value of publicly traded equities relative to other assets could require us to change the investment mix assumed for future cash flows, which may increase policy liabilities and reduce net income attributed to shareholders. A reduction in the outlook for expected future returns for publicly traded equities, which could result from a fundamental change in future expected economic growth, would increase policy liabilities and reduce net income attributed to shareholders. Furthermore, to the extent publicly traded equities are held as AFS, other than temporary impairments that arise will reduce income.
- Expected long-term annual market growth assumptions for public equities for key markets are based on long-term historical observed experience. In the stochastic valuations of our segregated fund guarantee business, those rates inclusive of dividends are 9.5% per annum in Canada, 9.6% per annum in the U.S., 6.2% per annum in Japan and vary between 7.8% and 9.85% for European equity funds. The calibration of the economic scenario generators that are used to value segregated fund guarantee business complies with current CIA Standards of Practice for the valuation of these products. Implicit margins, determined through stochastic valuation processes, lower net yields used to establish policy liabilities. Assumptions used for public equities backing

liabilities are also developed based on historical experience but are constrained by different CIA Standards of Practice and differ slightly from those used in stochastic valuation. Alternative asset return assumptions vary based on asset class but are largely consistent, after application of valuation margins and differences in taxation, with returns assumed for public equities.

We experience interest rate and spread risk within the general fund primarily due to the uncertainty of future returns on investments.

- Interest rate and spread risk arises from general fund guaranteed benefit products, general fund adjustable benefit products with minimum rate guarantees, general fund products with guaranteed surrender values, segregated fund products with minimum benefit guarantees and from surplus fixed income investments. The risk arises within the general fund primarily due to the uncertainty of future returns on investments to be made as assets mature and as recurring premiums are received and invested or reinvested to support longer dated liabilities. Interest rate risk also arises due to minimum rate guarantees and guaranteed surrender values on products where investment returns are generally passed through to policyholders. In order to reduce interest rate risk, the duration of fixed income investments in liability and surplus segments is lengthened by entering into interest rate hedges.
- The valuation of policy liabilities reflects assumptions for the yield on future investments and the projected cash flows associated with interest rate hedges. A general decline in interest rates, without a change in corporate bond spreads and swap spreads, will reduce the assumed yield on future investments but favourably impact the value of lengthening interest rate hedges. Conversely, a general increase in interest rates, without a change in corporate bond spreads and swap spreads, will increase the assumed yield on future investments, but unfavourably impact the value of lengthening interest rate hedges. The Company's disclosed estimated impact from interest rate movements reflects a parallel increase and decrease in interest rates of specific amounts. The reinvestment assumptions used in the valuation of our insurance liabilities are based on interest rate scenarios and calibration criteria set by the Actuarial Standards Board, while our interest rate hedges are valued using current market interest rates. Therefore, in any particular quarter, changes to the reinvestment assumptions are not fully aligned to changes in current market interest rates especially when there is a significant change in the shape of the interest rate curve. As a result, the impact from non-parallel movements may be materially different from the estimated impact of parallel movements. Furthermore, changes in interest rates could change the reinvestment scenarios used in the calculation of our actuarial liabilities. The reinvestment scenario changes tend to amplify the negative effects of a decrease in interest rates, and dampen the positive effects of interest rate increases. In addition, decreases in corporate bond spreads or increases in swap spreads will result in an increase in policy liabilities and a reduction in net income attributed to shareholders, while an increase in corporate bond spreads or a decrease in swap spreads will have the opposite impact. The impact of changes in interest rates and in spreads may be partially offset by changes to credited rates on adjustable products that pass through investment returns to policyholders.
- For segregated fund and variable annuity products, a sustained increase in interest rate volatility or a decline in interest rates would also likely increase the costs of hedging the benefit guarantees provided.

We experience ALDA performance risk when actual returns are lower than expected returns.

- ALDA performance risk arises from general fund investments in commercial real estate, timber properties, farmland properties, infrastructure, oil and gas properties, and private equities.
- Where these assets are used to support policy liabilities, the policy valuation incorporates projected investment returns on these assets. ALDA assumptions vary by asset class and generally have a similar impact on policy liabilities as public equities would. If actual returns are lower than the expected returns, the Company's policy liabilities will increase, reducing net income attributed to shareholders. A reduction in the outlook for expected future returns for ALDA, which could result from a variety of factors such as a fundamental change in future expected economic growth or declining risk premiums due to increased competition for such assets, would increase policy liabilities and reduce net income attributed to shareholders. Further, if returns on certain external asset benchmarks used to determine permissible assumed returns under the CIA Standards of Practice are lower than expected, the Company's policy liabilities will increase, reducing net income attributed to shareholders.
- In recent periods, the value of oil and gas assets has been negatively impacted by the decline in energy prices and could be further negatively affected by additional declines in energy prices as well as by a number of other factors including production declines, adverse operating results, the impact of weather conditions on seasonal demand, our ability to execute on capital programs, incorrect assessments of the value of acquisitions, uncertainties associated with estimating oil and natural gas reserves, difficult economic conditions and geopolitical events. Changes in government regulation of the oil and gas industry, including environmental regulation, carbon taxes and changes in the royalty rates resulting from provincial royalty reviews, could also adversely affect the value of our oil and gas investments. The negative impact of changes in these factors can take time to be fully reflected in the valuations of these investments, especially if the change is large and rapid. It can take time for market participants to adjust their forecasts and better understand the potential medium to long term impact of the changes. As a result, valuation changes in any given period may reflect the delayed impact of events that occurred in prior periods.
- Difficult economic conditions could result in higher vacancy, lower rental rates and lower demand for real estate investments, all of which would negatively impact the value of our real estate investments. Difficult economic conditions could also prevent companies in which we have made private equity investments from achieving their business plans and could cause the value of these investments to fall, or even cause the companies to fail entirely. Declining valuation multiples in the public equity market would also likely cause values to decline in our private equity portfolio. The timing and amount of investment income from private equity investments is difficult to predict, and investment income from these investments can vary from quarter to quarter.
- In addition, a rising interest rate environment could result in the value of some of our ALDA investments declining, particularly those with fixed contractual cash flows such as real estate.

- We rely on a diversified portfolio of ALDA assets to generate returns. Diversification benefits may go down over time, especially during a period of economic stress, which would adversely affect portfolio returns.
- The Company determines investment return assumptions for alternative long-duration assets in accordance with the Standards of Practice for the valuation of insurance contract liabilities and guidance published by the CIA. The guidance requires that the investment return assumption for these assets should not be higher than the historical long-term average returns of an appropriate broad-based index. Where such experience is not available, the investment return assumption for these assets should not result in a lower reserve than an assumption based on a historical return benchmark for public equities in the same jurisdiction. As a result, the impact of changes in the historical returns for public equity benchmarks may result in an update to our investment return assumptions.

Our liabilities are valued based on an assumed asset investment strategy over the long-term.

- We assume an investment strategy for the assets that back our liabilities. The strategy involves making assumptions on the kind of assets we will invest and the returns such assets will generate.
- We may not be able to implement our investment strategy as assumed due to a lack of assets available at the returns we assume. This may result in a change in investment strategy and/or assumed future returns, thus adversely impacting our financial results.

We experience foreign exchange risk as a substantial portion of our business is transacted in currencies other than Canadian dollars.

- Our financial results are reported in Canadian dollars. A substantial portion of our business is transacted in currencies other than Canadian dollars, mainly U.S. dollars, Hong Kong dollars and Japanese yen. If the Canadian dollar strengthens relative to these currencies, net income attributed to shareholders would decline and our reported shareholders' equity would decline. Further, to the extent that the resultant change in available capital is not offset by a change in required capital, our regulatory capital ratios would be reduced. A weakening of the Canadian dollar against the foreign currencies in which we do business would have the opposite effect, and would increase net income attributed to shareholders and shareholders' equity and would potentially increase our regulatory capital ratios. See "Impact of Foreign Exchange Rates" above.

The Company's hedging strategies will not fully reduce the market risks related to the product guarantees and fees being hedged, hedging costs may increase and the hedging strategies expose the Company to additional risks.

- The Company's market risk hedging strategies include a variable annuity guarantee dynamic hedging strategy and a macro equity risk hedging strategy. The variable annuity dynamic hedging strategy is designed to hedge the sensitivity of variable annuity guarantee policy liabilities to fund performance (both public equity and bond funds) and interest rate movements. The macro equity risk hedging strategy is designed to hedge a portion of our earnings sensitivity to public equity market movements arising from variable annuity guarantees not dynamically hedged, directly held exposures, and from other products and fees. Some of the limitations and risks associated with each strategy are described below.
- Our hedging strategies rely on the execution of derivative transactions in a timely manner. Therefore, hedging costs and the effectiveness of the strategy may be negatively impacted if markets for these instruments become illiquid. The Company is subject to the risk of increased funding and collateral demands which may become significant as equity markets increase.
- The Company is also subject to counterparty risks arising from the derivative instruments and to the risk of increased funding and collateral demands which may become significant as equity markets and interest rates increase. The strategies are highly dependent on complex systems and mathematical models that are subject to error and rely on forward-looking long-term assumptions that may prove inaccurate, and which rely on sophisticated infrastructure and personnel which may fail or be unavailable at critical times. Due to the complexity of the strategies there may be additional, unidentified risks that may negatively impact our business and future financial results. In addition, rising equity markets and interest rates that would otherwise result in profits on variable annuities will be offset by losses from our hedging positions. Refer to the risk factor "If a counterparty fails to fulfill its obligations, we may be exposed to risks we had sought to mitigate" for further information pertaining to counterparty risks.
- Under certain market conditions, which include a sustained increase in realized equity and interest rate volatilities, a decline in interest rates, or an increase in the correlation between equity returns and interest rate declines, the costs of hedging the benefit guarantees provided in variable annuities may increase or become uneconomic. In addition, there can be no assurance that our dynamic hedging strategy will fully offset the risks arising from the variable annuities being hedged.
- Policy liabilities and MCCSR required capital for variable annuity guarantees are determined using long-term forward-looking estimates of volatilities. These long-term forward-looking volatilities assumed for policy liabilities and required capital meet the CIA and OSFI calibration standards. To the extent that realized equity or interest rate volatilities in any quarter exceed the assumed long-term volatilities, or correlations between interest rate changes and equity returns are higher, there is a risk that rebalancing will be greater and more frequent, resulting in higher hedging costs.
- The level of guarantee claims ultimately paid will be impacted by policyholder longevity and policyholder activity including the timing and amount of withdrawals, lapses and fund transfers. The sensitivity of liability values to equity market and interest rate movements that we hedge are based on long-term expectations for longevity and policyholder activity, since the impact of actual longevity and policyholder experience variances cannot be hedged using capital markets instruments.

Changes in market interest rates may impact our net income attributed to shareholders and capital ratios.

- A prolonged low interest rate environment may result in charges related to lower fixed income reinvestment assumptions and an increase in new business strain until products are repositioned for the lower rate environment. Other potential consequences of low interest rates include:
  - Low interest rates could negatively impact sales;
  - Lower risk-free rates tend to increase the cost of hedging, and as a result the offering of guarantees could become uneconomic;
  - The reinvestment of cash flows into low yielding AFS bonds could result in lower future earnings on surplus;
  - A lower interest rate environment could be correlated with other macro-economic factors including unfavourable economic growth and lower returns on other asset classes;
  - Lower interest rates could contribute to potential impairments of goodwill;
  - Lower interest rates could lead to lower mean bond parameters used for the stochastic valuation of segregated fund guarantees, resulting in higher policy liabilities;
  - Lower interest rates would also reduce expected earnings on in-force policies, which would reduce core earnings, lower net income attributed to shareholders and may increase new business strain until products are repositioned for the lower rate environment;
  - A prolonged low interest environment may also result in the Actuarial Standard Board lowering the promulgated Ultimate Reinvestment Rate (“URR”) and require us to increase our provisions;
  - The difference between the current investable returns and the returns used in pricing new business are generally capitalized when new business is written. Lower interest rates result in higher new business strain until products are re-priced or interest rates increase; and
  - Fixed income reinvestment rates other than the URR are based on current market rates. The net income sensitivity to changes in current rates is outlined in the section “Interest Rate and Spread Risk Sensitivities and Exposure Measures” above.

AFS investments are recorded at fair value, but losses arising on those investments may not have been recorded in income.

- Some of our investments are classified as AFS. AFS debt securities are recorded at fair value, but unrealized gains and losses are recorded in a separate component of equity and are not charged to net income attributed to shareholders. Unrealized gains are recorded in net income attributed to shareholders when the related asset is sold. Unrealized losses are recorded in net income attributed to shareholders either when the related asset is sold or when the related asset is considered impaired and the impairment is not considered to be temporary. Should market levels decline, impairments may be judged to be other than temporary and part or all of any unrealized losses may be charged against future income as a result.
- Our valuation of certain financial instruments may include methodologies, estimations and assumptions which are subjective in nature. Changes to investment valuations may arise in the future which materially adversely affect our results of operations and financial condition.
- The fair value for certain of our investments that are not actively traded is determined using models and other valuation techniques. These values therefore incorporate considerable judgment and involve making estimates including those related to the timing and amounts of expected future cash flows and the credit standing of the issuer or counterparty. The use of different methodologies and assumptions may have a material effect on the estimated fair value amounts.
- Significant market disruption could result in rapidly widening credit spreads and illiquidity, volatile markets and for some instruments significantly reduced trading activity. It has been, and may continue to be difficult to value certain of our securities if trading is less active and/or market data is harder to observe. Consequently, valuations may include inputs and assumptions that are less observable or require greater estimation thereby resulting in values which may differ materially from the value at which the investments may be ultimately sold. Further, rapidly changing credit and equity market conditions could materially impact the valuation of securities as reported within our Consolidated Financial Statements and the period-to-period changes in value could vary significantly. Decreases in value that become recognizable in future periods could have a material adverse effect on our results of operations and financial condition.

Liquidity Risk Factors

Manulife is exposed to liquidity risk in each of our operating companies and in our holding company. In the operating companies, expected cash and collateral demands arise day-to-day to fund anticipated policyholder benefits, withdrawals of customer deposit balances, reinsurance settlements, derivative instrument settlements/collateral pledging, expenses, investment and hedging activities. Under stressed conditions, unexpected cash and collateral demands could arise primarily from a change in the level of policyholders either terminating policies with large cash surrender values or not renewing them when they mature, withdrawals of customer deposit balances, borrowers renewing or extending their loans when they mature, derivative settlements or collateral demands, and reinsurance settlements or collateral demands.

Adverse capital and credit market conditions may significantly affect our liquidity risk.

- Reduced asset liquidity may restrict our ability to sell certain types of assets for cash without taking significant losses. If providers of credit preserve their capital, our access to borrowing from banks and others or access to other types of credit such as letters of credit, may be reduced. If investors have a negative perception of our creditworthiness, this may reduce access to wholesale

borrowing in the debt capital markets, or increase borrowing costs. Should large and unexpected cash outflows occur, exceeding our worst case stress testing, we may be forced to sell assets at a loss or raise additional funds at significant cost in order to meet our liquidity needs.

- We are dependent on cash flow from operations, a pool of highly liquid money market securities and holdings of sovereign bonds, near-sovereign bonds and other liquid marketable securities to provide liquidity. We need liquidity to meet our payment obligations including those related to insurance and annuity benefits, cashable liabilities, our operating expenses, interest on our debt, dividends on our equity capital, and to replace maturing and certain callable liabilities.
- Liquid assets are also required to pledge as collateral to support activities such as the use of derivatives for hedging purposes and to cover cash settlement associated with exchange-traded derivatives that are settled with exchanges. The implementation of Dodd-Frank in the United States increased the amount of derivatives executed through centralized exchanges and cleared through regulated clearinghouses and therefore increased related liquidity risk. Other jurisdictions in which we operate could enact similar regulations within the next few years for cleared transactions as well as new upfront collateral and more restrictive collateral (relative to the current OTC market) to cover changes in derivative values for non-cleared transactions. The principal sources of our liquidity are cash and our assets that are readily convertible into cash, including insurance and annuity premiums, fee income earned on AUM, money market securities, and cash flow from our investment portfolio. The issuance of long-term debt, common and preferred shares and other capital securities may also increase our available liquid assets or be required to replace certain maturing or callable liabilities.
- In the event we seek additional financing, the availability and terms of such financing will depend on a variety of factors including market conditions, the availability of credit to the financial services industry, our credit ratings and credit capacity, as well as the possibility that customers, lenders or investors could develop a negative perception of our long-term or short-term financial prospects if we incur large financial losses or if the level of our business activity decreases further due to a significant market downturn.

We are exposed to re-pricing risk on letters of credit.

- In the normal course of business, third-party banks issue letters of credit on our behalf. In lieu of posting collateral, our businesses utilize letters of credit for which third parties are the beneficiaries, as well as for affiliate reinsurance transactions between subsidiaries of MFC. Letters of credit and letters of credit facilities must be renewed periodically. At time of renewal, the Company is exposed to re-pricing risk and under adverse conditions increases in costs may be realized. In the most extreme scenarios, letters of credit capacity could become constrained due to non-renewals which would restrict our flexibility to manage capital. This could negatively impact our ability to meet local capital requirements or our sales of products in jurisdictions in which our operating companies have been affected. As at December 31, 2016, letters of credit for which third parties are beneficiary, in the amount of $83 million, were outstanding. There were no assets pledged against these outstanding letters of credit as at December 31, 2016.

Our obligations to pledge collateral or make payments related to declines in value of specified assets may adversely affect our liquidity.

- In the normal course of business, we are obligated to pledge assets to comply with jurisdictional regulatory and other requirements including collateral pledged in relation to derivative contracts and assets held as collateral for repurchase funding agreements. The amount of collateral we may be required to post under these agreements, and the amount of payments we are required to make to our counterparties, may increase under certain circumstances, including a sustained or continued decline in the value of our derivative contracts. Such additional collateral requirements and payments could have an adverse effect on our liquidity. As at December 31, 2016, total pledged assets were $6,182 million, compared with $6,071 million in 2015.

Our banking subsidiary relies on confidence sensitive deposits and this increases our liquidity risk.

- Manulife Bank is a wholly-owned subsidiary of our Canadian life insurance operating company, MLI. The Bank is principally funded by retail deposits. A real or perceived problem with the Bank or its parent companies could result in a loss of confidence in the Bank's ability to meet its obligations, which in turn may trigger a significant withdrawal of deposit funds. A substantial portion of the Bank's deposits are demand deposits that can be withdrawn at any time, while the majority of the Bank's assets are first residential mortgages in the form of home equity lines of credit, which represent long-term funding obligations. If deposit withdrawal speeds exceed our extreme stress test assumptions the Bank may be forced to sell assets at a loss to third parties, call the home equity lines of credit or the Bank may request support from MLI.

As a holding company, MFC depends on the ability of its subsidiaries to transfer funds to it to meet MFC's obligations and pay dividends.

- MFC is a holding company and relies on dividends and interest payments from our insurance and other subsidiaries as the principal source of cash flow to meet MFC's obligations and pay dividends. As a result, MFC's cash flows and ability to service its obligations are dependent upon the earnings of its subsidiaries and the distribution of those earnings and other funds by its subsidiaries to MFC. Substantially all of MFC's business is currently conducted through its subsidiaries. In addition, OSFI is considering capital requirements for MLI on a stand-alone basis that could further restrict dividends and other distributions to MFC.
- The ability of our holding company to fund its cash requirements depends upon it receiving dividends, distributions and other payments from our operating subsidiaries. The ability of MFC's insurance subsidiaries to pay dividends to MFC in the future will depend on their earnings and regulatory restrictions. These subsidiaries are subject to a variety of insurance and other laws and regulations that vary by jurisdiction and are intended to protect policyholders and beneficiaries in that jurisdiction first and foremost, rather than investors. These subsidiaries are generally required to maintain solvency and capital standards as set by their local

regulators and may also be subject to other regulatory restrictions, all of which may limit the ability of subsidiary companies to pay dividends or make distributions to MFC. Such limits could have a material adverse effect on MFC's liquidity, including its ability to pay dividends to shareholders and service its debt.

- The potential changes to regulatory capital and actuarial and accounting standards could also limit the ability of the insurance subsidiaries to pay dividends or make distributions and could have a material adverse effect on MFC's liquidity and on internal capital mobility, including on MFC's ability to pay dividends to shareholders and service its debt. We may be required to raise additional capital, which could be dilutive to existing shareholders, or to limit the new business we write, or to pursue actions that would support capital needs but adversely impact our subsequent earnings potential. In addition, the timing and outcome of these initiatives could have a significantly adverse impact on our competitive position relative to that of other Canadian and international financial institutions with which we compete for business and capital.
- The payment of dividends to MFC by MLI is subject to restrictions set out in the ICA. The ICA prohibits the declaration or payment of any dividend on shares of an insurance company if there are reasonable grounds for believing: (i) the company does not have adequate capital and adequate and appropriate forms of liquidity; or (ii) the declaration or the payment of the dividend would cause the company to be in contravention of any regulation made under the ICA respecting the maintenance of adequate capital and adequate and appropriate forms of liquidity, or of any direction made to the company by the Superintendent. All of our U.S. and Asian operating life insurance companies are subsidiaries of MLI.
- Certain of MFC's U.S. insurance subsidiaries also are subject to insurance laws in Michigan, New York, Massachusetts, and Vermont, the jurisdictions in which these subsidiaries are domiciled, which impose general limitations on the payment of dividends and other upstream distributions by these subsidiaries to MLI.
- Our Asian insurance subsidiaries are also subject to restrictions in the jurisdictions in which these subsidiaries are domiciled which could affect their ability to pay dividends to MLI in certain circumstances.
- The Company seeks to maintain capital in its insurance subsidiaries in excess of the minimum required in all jurisdictions in which the Company does business. The minimum requirements in each jurisdiction may increase due to regulatory changes and we may decide to maintain additional capital in our operating subsidiaries to fund expected growth of the business or to deal with changes in the risk profile of such subsidiaries. Any such increases in the level of capital may reduce the ability of the operating companies to pay dividends and have a material adverse effect on MFC's liquidity.

The declaration and payment of dividends and the amount thereof is subject to change.

- The holders of common shares are entitled to receive dividends as and when declared by the Board of Directors of MFC, subject to the preference of the holders of Class A Shares, Class 1 Shares, Class B Shares (collectively, the "Preferred Shares") and any other shares ranking senior to the common shares with respect to priority in payment of dividends. The declaration and payment of dividends and the amount thereof is subject to the discretion of the Board of Directors of MFC and is dependent upon the results of operations, financial condition, cash requirements and future prospects of, and regulatory restrictions on the payment of dividends by MFC and other factors deemed relevant by the Board of Directors of MFC. Although MFC has historically declared quarterly cash dividends on the common shares, MFC is not required to do so and the Board of Directors of MFC may reduce, defer or eliminate MFC's common share dividend in the future.
- The foregoing risk disclosure in respect of the declaration and payment of dividends on the common shares applies equally in respect of the declaration and payment of dividends on the Preferred Shares, notwithstanding that the Preferred Shares have a fixed rate of dividend.
- See "Government Regulation" and "Dividends" in MFC's Annual Information Form dated February 9, 2017 for a summary of additional statutory and contractual restrictions concerning the declaration of dividends by MFC.

Credit Risk Factors

Worsening regional and global economic conditions or the rise in interest rates could result in borrower or counterparty defaults or downgrades, and could lead to increased provisions or impairments related to our general fund invested assets and off-balance sheet derivative financial instruments, and an increase in provisions for future credit impairments to be included in our policy liabilities. Any of our reinsurance providers being unable or unwilling to fulfill their contractual obligations related to the liabilities we cede to them could lead to an increase in policy liabilities.

Our invested assets primarily include investment grade bonds, private placements, commercial mortgages, asset-backed securities, and consumer loans. These assets are generally carried at fair value, but changes in value that arise from a credit-related impairment are recorded as a charge against income. The return assumptions incorporated in actuarial liabilities include an expected level of future asset impairments. There is a risk that actual impairments will exceed the assumed level of impairments in the future and earnings could be adversely impacted.

Defaults and downgrade charges on our invested assets were generally in line with our historical average in 2016; however, we still expect volatility on a quarterly basis and losses could potentially rise above long-term expected levels. Net impaired fixed income assets were $224 million, representing 0.07% of total general fund invested assets as at December 31, 2016, compared with $161 million, representing 0.05% of total general fund invested assets as at December 31, 2015.

If a counterparty fails to fulfill its obligations, we may be exposed to risks we had sought to mitigate.

- The Company uses derivative financial instruments to mitigate exposures to public equity, foreign currency, interest rate and other market risks arising from on-balance sheet financial instruments, guarantees related to variable annuity products, selected anticipated transactions and certain other guarantees. The Company may be exposed to counterparty risk if a counterparty fails to pay amounts owed to us or otherwise perform its obligations to us. Counterparty risk increases during economic downturns because the probability of default increases for most counterparties. If any of these counterparties default, we may not be able to recover the amounts due from that counterparty. As at December 31, 2016, the largest single counterparty exposure without taking into account the impact of master netting agreements or the benefit of collateral held, was $3,891 million (2015 – $4,155 million). The net exposure to this counterparty, after taking into account master netting agreements and the fair value of collateral held, was nil (2015 – nil). As at December 31, 2016, the total maximum credit exposure related to derivatives across all counterparties, without taking into account the impact of master netting agreements and the benefit of collateral held, was $24,603 million (2015 – $25,332 million) compared with $190 million after taking into account master netting agreements and the benefit of fair value of collateral held (2015 – $68 million). The exposure to any counterparty would grow if, upon the counterparty's default, markets moved such that our derivatives with that counterparty gain in value. Until we are able to replace that derivative with another counterparty, the gain on the derivatives subsequent to the counterparty's default would not be backed by collateral.
- The Company reinsures a portion of the business we enter into; however, we remain legally liable for contracts that we had reinsured. In the event that any of our reinsurance providers were unable or unwilling to fulfill their contractual obligations related to the liabilities we cede to them, we would need to increase actuarial reserves, adversely impacting our net income attributed to shareholders and capital position. In addition, the Company has over time sold certain blocks of business to third-party purchasers using reinsurance. To the extent that the reinsured contracts are not subsequently novated to the purchasers, we remain legally liable to the insureds. Should the purchasers be unable or unwilling to fulfill their contractual obligations under the reinsurance agreement, we would need to increase policy liabilities resulting in a charge to net income attributed to shareholders. To reduce credit risk, the Company may require purchasers to provide collateral for their reinsurance liabilities.
- We participate in a securities lending program whereby blocks of securities are loaned to third parties, primarily major brokerage firms and commercial banks. Collateral, which exceeds the market value of the loaned securities, is retained by the Company until the underlying security has been returned. If any of our securities lending counterparties default and the value of the collateral is insufficient, we would incur losses. As at December 31, 2016, the Company had loaned securities (which are included in invested assets) valued at approximately $1,956 million, compared with $648 million at December 31, 2015.

The determination of allowances and impairments on our investments is subjective and changes could materially impact our results of operations or financial position.

- The determination of allowances and impairments is based upon a periodic evaluation of known and inherent risks associated with the respective security. Management considers a wide range of factors about the security and uses its best judgment in evaluating the cause of the decline, in estimating the appropriate value for the security and in assessing the prospects for near-term recovery. Inherent in management's evaluation of the security are assumptions and estimates about the operations of the issuer and its future earnings potential. Considerations in the impairment evaluation process include: (i) the severity of the impairment; (ii) the length of time and the extent to which the market value of a security has been below its carrying value; (iii) the financial condition of the issuer; (iv) the potential for impairments in an entire industry sector or sub-sector; (v) the potential for impairments in certain economically depressed geographic locations; (vi) the potential for impairments of securities where the issuer, series of issuers or industry has suffered a catastrophic type of loss or has exhausted natural resources; (vii) our ability and intent to hold the security for a period of time sufficient to allow for the recovery of its value to an amount equal to or greater than cost or amortized cost; (viii) unfavourable changes in forecasted cash flows on mortgage-backed and asset-backed securities; and (ix) other subjective factors, including concentrations and information obtained from regulators and rating agencies.
- Such evaluations and assessments are revised as conditions change and new information becomes available. We update our evaluations regularly and reflect changes in allowances and impairments as such evaluations warrant. The evaluations are inherently subjective, and incorporate only those risk factors known to us at the time the evaluation is made. There can be no assurance that management has accurately assessed the level of impairments that have occurred. Additional impairments will likely need to be taken or allowances provided for in the future as conditions evolve. Historical trends may not be indicative of future impairments or allowances.

Insurance Risk Factors

We make a variety of assumptions related to the future level of claims, policyholder behaviour, expenses and sales levels when we design and price products, and when we establish policy liabilities. Assumptions for future claims are generally based on both Company and industry experience, and assumptions for future policyholder behaviour and expenses are generally based on Company experience. Assumptions for future policyholder behaviour include assumptions related to the retention rates for insurance and wealth products. Assumptions for expenses include assumptions related to future maintenance expense levels and volume of the business.

Losses may result should actual experience be materially different than that assumed in the valuation of policy liabilities.

- Such losses could have a significant adverse effect on our results of operations and financial condition. In addition, we periodically review the assumptions we make in determining our policy liabilities and the review may result in an increase in policy liabilities and

a decrease in net income attributed to shareholders. Such assumptions require significant professional judgment, and actual experience may be materially different than the assumptions we make. (see “Critical Accounting and Actuarial Policies” above)

We may be unable to obtain necessary price increases on our in-force long-term care business, or may face delays in implementation.

- We continue to seek state regulatory approvals for price increases on existing long-term care business in the United States. We cannot be certain whether or when each approval will be granted. Our policy liabilities reflect our estimates of the impact of these price increases, but should we be less successful than anticipated in obtaining them, then policy liabilities could increase accordingly and reduce net income attributed to shareholders.

Evolving legislation related to genetic testing could adversely impact our underwriting abilities.

- Current or future legislation in jurisdictions where Manulife operates may restrict its right to underwrite based on access to genetic test results. Without the obligation of disclosure, the asymmetry of information shared between applicant and insurer could increase anti-selection in both new business and in-force policyholder behaviour. The impact of restricting insurers’ access to this information and the associated problems of anti-selection becomes more acute where genetic technology leads to advancements in diagnosis of life threatening conditions that are not matched by improvements in treatment. We cannot predict the potential financial impact that this would have on the Company or the industry as a whole. In addition, there may be further unforeseen implications as genetic testing continues to evolve and becomes more established in mainstream medical practice.

Life and health insurance claims may be impacted unexpectedly by changes in the prevalence of diseases or illnesses, medical and technology advances, lifestyle changes, natural disasters, large-scale man-made disasters and acts of terrorism.

- The cost of health insurance benefits may be impacted by unforeseen trends in the incidence, termination and severity rates of claims. The ultimate level of lifetime benefits paid to policyholders may be increased by an unexpected increase in life expectancy. For example, advances in technology could lead to longer lives through better medical treatment or better disease prevention. Policyholder behaviour including premium payment patterns, policy renewals, lapse rates and withdrawal and surrender activity are influenced by many factors including market and general economic conditions, and the availability and relative attractiveness of other products in the marketplace. For example, a weak or declining economic environment could increase the value of guarantees associated with variable annuities or other embedded guarantees and contribute to adverse policyholder behaviour experience. As well, adverse claims experience could result from systematic anti-selection, which could arise from the development of investor owned and secondary markets for life insurance policies, anti-selective lapse behaviour, underwriting process failures, or other factors.

External market conditions determine the availability, terms and cost of the reinsurance protection for new business.

- We purchase reinsurance protection on certain risks underwritten by our various business segments. Typically, reinsurance agreements are intended to bind the reinsurer for the term of the business reinsured at a fixed price but circumstances may call for increases to be agreed upon. Accordingly, we may incur additional costs for reinsurance or may not be able to obtain sufficient reinsurance on acceptable terms. This could result in accounting charges and the assumption of more risk on business already reinsured and could adversely affect our ability to write future business or result in the assumption of more risk with respect to those policies we issue.

Operational Risk Factors

Operational risk is naturally present in all of our business activities and encompasses a broad range of risks, including regulatory compliance failures, legal disputes, technology failures, business interruption, information security and privacy breaches, human resource management failures, processing errors, modelling errors, business integration, theft and fraud, and damage to physical assets. Exposures can take the form of financial losses, regulatory sanctions, loss of competitive positioning, or damage to our reputation. Operational risk is also embedded in all the practices we use to manage other risks; therefore, if not managed effectively, operational risk can impact our ability to manage other key risks such as credit risk, market risk, liquidity risk and insurance risk.

Adverse publicity, litigation or regulatory action resulting from our business practices or actions by our employees, representatives and/or business partners, could erode our corporate image and damage our franchise value and/or create losses.

- Manulife’s reputation is one of its most valuable assets. Harm to a company’s reputation is often a consequence of risk control failure, whether associated with complex financial transactions or relatively routine operational activities. Manulife’s reputation could also be harmed by the actions of third parties with whom we do business. Our representatives include affiliated broker-dealers, agents, wholesalers and independent distributors, such as broker-dealers and banks, whose services and representations our customers rely on. Business partners include, among others, third parties to whom we outsource certain functions and that we rely on to fulfill various obligations.
- If any of these representatives or business partners fail to adequately perform their responsibilities, or monitor its own risk, these failures could affect our business reputation and operations. While we seek to maintain adequate internal risk management policies and procedures and protect against performance failures, events may occur that could cause us to lose customers or suffer legal or regulatory sanctions, which could have a material adverse effect on our reputation, our business, and our results of operations. For

further discussion of government regulation and legal proceedings refer to “Government Regulation” in MFC’s Annual Information Form dated February 9, 2017 and “Legal and Regulatory Proceedings” below.

If we are not able to attract, motivate and retain agency leaders and individual agents, our competitive position, growth and profitability will suffer.

- We must attract and retain sales representatives to sell our products. Strong competition exists among financial services companies for efficient and effective sales representatives. We compete with other financial services companies for sales representatives primarily on the basis of our financial position, brand, support services and compensation and product features. Any of these factors could change either because we change the Company or our products, or because our competitors change theirs and we are unable or unwilling to adapt. If we are unable to attract and retain sufficient sales representatives to sell our products, our ability to compete and revenues from new sales would suffer, which could have a material adverse effect on our business, results of operations and financial condition.

If we are unable to complete key projects on time, on budget, and capture planned benefits, our business strategies and plans, and operations may be impaired.

- We must successfully deliver a number of key projects in order to implement our business strategies and plans. If we are unable to complete these projects in accordance with planned schedules, and to capture projected benefits, there could be a material adverse effect on our business and financial condition.

The inter-connectedness of our operations and risk management strategies could expose us to risk if all factors are not appropriately considered and communicated.

- Our business operations, including strategies and operations related to risk management, asset liability management and liquidity management, are interconnected and increasingly complex. Changes in one area may have a secondary impact in another area of our operations. For example, risk management actions, such as the increased use of interest rate swaps, could have implications for the Company’s Investment Division or its Treasury function, as this strategy could result in the need to post additional amounts of collateral. Failure to appropriately consider these inter-relationships, or effectively communicate changes in strategies or activities across our operations, could have a negative impact on the strategic objectives or operations of another group. Further, failure to consider these inter-relationships in our modeling and financial and strategic decision making processes could have a negative impact on our operations.

Our risk management policies, procedures and strategies may leave us exposed to unidentified or unanticipated risks, which could negatively affect our business, results of operations and financial condition.

- We have devoted significant resources to develop our risk management policies, procedures and strategies and expect to continue to do so in the future. Nonetheless, our policies, procedures and strategies may not be comprehensive. Many of our methods for measuring and managing risk and exposures are based upon the use of observed historical market behaviour or statistics based on historical models. Future behavior may be very different from past behavior, especially if there are some fundamental changes that affect future behavior. As an example, the increased occurrence of negative interest rates can make it difficult to model future interest rates as interest rate models have been generally developed for an environment of positive interest rates. As a result, these methods may not fully predict future exposures, which can be significantly greater than our historical measures indicate. Other risk management methods depend upon the evaluation and/or reporting of information regarding markets, clients, client transactions, catastrophe occurrence or other matters publicly available or otherwise accessible to us. This information may not always be accurate, complete, up-to-date or properly evaluated or reported.

We are subject to tax audits, tax litigation or similar proceedings, and as a result we may owe additional taxes, interest and penalties in amounts that may be material.

- We are subject to income and other taxes in the jurisdictions in which we do business. In determining our provisions for income taxes and our accounting for tax-related matters in general, we are required to exercise judgment. We regularly make estimates where the ultimate tax determination is uncertain. There can be no assurance that the final determination of any tax audit, appeal of the decision of a taxing authority, tax litigation or similar proceedings will not be materially different from that reflected in our historical financial statements. The assessment of additional taxes, interest and penalties could be materially adverse to our current and future results of operations and financial condition.

Our non-North American operations face political, legal, operational and other risks that could negatively affect those operations or our results of operations and financial condition.

- A substantial portion of our revenue and net income attributed to shareholders is derived from our operations outside of North America, primarily in key Asian markets. Some of these key geographical markets are developing and are rapidly growing countries and markets that present unique risks that we do not face, or are negligible, in our operations in Canada or the United States. Our operations outside of North America face the risk of discriminatory regulation, political and economic instability, market volatility and significant inflation, limited protection for, or increased costs to protect intellectual property rights, inability to protect and/or enforce contractual or legal rights, nationalization or expropriation of assets, price controls and exchange controls or other restrictions that prevent us from transferring funds from these operations out of the countries in which they operate or converting local currencies we hold into Canadian or U.S. dollars. Failure to manage these risks could have a significant negative impact on our operations and profitability.

- We are currently planning to expand our global operations in markets where we operate and potentially in new markets. This may require considerable management time, as well as start-up expenses for market development before any significant revenues and earnings are generated. Operations in new foreign markets may achieve low margins or may be unprofitable, and expansion in existing markets may be affected by local economic and market conditions.

We are regularly involved in litigation.

- We are regularly involved in litigation, both as a plaintiff or defendant. These cases could result in an unfavourable resolution, and could have a material adverse effect on our results of operations and financial condition.

A technology failure, cyber-attack, information security or privacy breach of ours or of a third party, as well as other types of business disruptions such as natural or man-made disasters, could significantly disrupt our business, impede our ability to conduct business and adversely impact our business, results of operations, financial condition, and reputation.

- Technology is used in virtually all aspects of our business and operations; in addition, part of our strategy involves the expansion of our digital customer interfaces. Our technology infrastructure, information services and applications are governed and managed according to policies and standards for operational integrity, resiliency, data integrity, confidentiality and information security. Disruption, privacy breaches, or security breaches due to system failure, denial of service attacks, human errors, natural disasters, man-made disasters, criminal activity, fraud, cyber-attacks, pandemics, or other events beyond our control, could prevent us from effectively operating our business, subject us to regulatory sanctions and legal claims, lead to a loss of customers, assets and revenues, result in unauthorized disclosures of personal or confidential information, or otherwise adversely affect us from a financial, operational and reputational perspective.
- It is possible that the Company may not be able to anticipate or to implement effective preventive measures against all disruptions or privacy and security breaches, especially because the techniques used change frequently, generally increase in sophistication, often are not recognized until launched, and because cyber-attacks can originate from a wide variety of sources, including organized crime, hackers, terrorists, activists, and other external parties, including parties sponsored by hostile foreign governments. Those parties may also attempt to fraudulently induce employees, customers, third-party service providers or other users of the Company's systems to disclose sensitive information in order to gain access to the Company's data or that of its customers or clients. We, our customers, regulators and other third parties have been subject to, and are likely to continue to be the target of, cyber-attacks, including computer viruses, malicious or destructive code, phishing attacks, denial of service and other security incidents, that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of personal, confidential, proprietary and other information of the Company, our employees, our customers or of third parties, or otherwise materially disrupt our or our customers' or other third parties' network access or business operations. The Company maintains cyber risk insurance, but this insurance may not cover all costs associated with the financial, operational and reputational consequences of personal, confidential or proprietary information being compromised.
- In particular, our computer networks are subject to the risk of so-called Advanced Persistent Threats ("APT"). An APT attack is a type of sophisticated attack that has become more pervasive and frequent within the financial services sector. An APT attack is a network attack in which an unauthorized person or persons attempt(s) to gain undetected access to a network and maintain that access over a period of time. The intention of an APT attack is to steal data rather than to cause other damage to the network or organization. APT attacks target organizations in sectors with high-value information, such as national defense, manufacturing and the financial industry. The Company has an Information Risk Management Program, which includes information and cyber security defenses, to protect our networks and systems from attacks; however, there can be no assurance that these counter measures will be successful in every instance in protecting our networks against APT or other types of attacks. An APT attack that results in access to our network could adversely impact us from a financial, operational and reputational perspective.
- DDoS (Distributed Denial of Service) attacks are increasing in frequency and severity, and are gaining recognition as a top method of business disruption. They leverage the massive, distributed, and stolen computing power from infected computers to flood target webservers with traffic. The goal of a DDoS attack is to disrupt the online operations of the target organization by consuming all available network bandwidth and server resources. DDoS attacks are now common occurrences, with some research labs reporting thousands of attacks per day. A DDoS attack that results in a disruption of our online operations may result in financial, operational or reputational damage to us.
- Ransomware has become a common attack vector in the financial services sector. It is a type of malware that prevents or limits users from accessing their system, either by locking the system's screen or by locking the users' files, and requires a ransom payment to unlock these files. Critical data could be lost if it became unavailable due to a ransomware attack, which could cause a disruption to our business and could impact us from a financial, operational, and reputational perspective.

Competition for the best people is intense and an inability to recruit qualified individuals may negatively impact our ability to execute on business strategies or to conduct our operations.

- We compete with other insurance companies and financial institutions for qualified executives, employees and agents. We must attract and retain top talent to maintain our competitive advantage. Failure to attract and retain the best people could adversely impact our business.

Model risk may arise from the inappropriate use or interpretation of models or their output, or the use of deficient models, data or assumptions.

- We are relying on some highly complex models for pricing, valuation and risk measurement, and for input to decision making. Consequently, the risk of inappropriate use or interpretation of our models or their output, or the use of deficient models, could have a material adverse effect on our business.
- We have embarked on a multi-year initiative to enhance our valuation models and processes across the organization. We do not expect this initiative to result in significant reserve adjustments. However, as we systematically review our models, there could be updates to our assumptions and methodologies that result in reserve changes.

Environmental risk may arise related to our commercial mortgage loan portfolio and owned property or from our business operations.

- Environmental risk may originate from investment properties that are subject to natural or man-made environmental risk. Real estate assets may be owned, leased and/or managed, as well as mortgaged by Manulife and we might enter into the chain of liability due to foreclosure ownership when in default.
- Liability under environmental protection laws resulting from our commercial mortgage loan portfolio and owned property (including commercial real estate, oil and gas, timberland and farmland properties) may adversely impact our reputation, results of operations and financial condition. Under applicable laws, contamination of a property with hazardous materials or substances may give rise to a lien on the property to secure recovery of the costs of cleanup. In some instances, this lien has priority over the lien of an existing mortgage encumbering the property. The environmental risk may result from on-site or off-site (adjacent) due to migration of regulated pollutants or contaminates with financial or reputational environmental risk and liability consequences by virtue of strict liability. Environmental risk could also arise from natural disasters (e.g., weather, fire, earthquake, floods, pests) or human activities (use of chemicals, pesticides) conducted within the site or when impacted from adjacent sites.
- Additionally, as lender, we may incur environmental liability (including without limitation liability for clean-up, remediation and damages incurred by third parties) similar to that of an owner or operator of the property, if we or our agents exercise sufficient control over the operations at the property. We may also have liability as the owner and/or operator of real estate for environmental conditions or contamination that exist or occur on the property, or affecting other property.
- In addition, failure to adequately prepare for the potential impacts of climate change may have a negative impact on our financial position or our ability to operate. Potential impacts may be direct or indirect and may include business losses or disruption resulting from extreme weather conditions; the impact of changes in legal or regulatory framework made to address climate change; or increased mortality or morbidity resulting from environmental damage or climate change.

Additional Risk Factors That May Affect Future Results

- Other factors that may affect future results include changes in government trade policy, monetary policy or fiscal policy; political conditions and developments in or affecting the countries in which we operate; technological changes; public infrastructure disruptions; changes in consumer spending and saving habits; the possible impact on local, national or global economies from public health emergencies, such as an influenza pandemic, and international conflicts and other developments including those relating to terrorist activities. Although we take steps to anticipate and minimize risks in general, unforeseen future events may have a negative impact on our business, financial condition and results of operations.

We caution that the preceding discussion of risks that may affect future results is not exhaustive. When relying on our forward-looking statements to make decisions with respect to our Company, investors and others should carefully consider the foregoing risks, as well as other uncertainties and potential events, and other external and Company specific risks that may adversely affect the future business, financial condition or results of operations of our Company.

Controls and Procedures

Disclosure Controls and Procedures

Our disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed by us is recorded, processed, summarized, and reported accurately and completely and within the time periods specified under Canadian and U.S. securities laws. Our process includes controls and procedures that are designed to ensure that information is accumulated and communicated to management, including the CEO and CFO, to allow timely decisions regarding required disclosure.

As of December 31, 2016, management evaluated the effectiveness of its disclosure controls and procedures as defined under the rules adopted by the U.S. Securities and Exchange Commission and the Canadian securities regulatory authorities. This evaluation was performed under the supervision of the Audit Committee, the CEO and CFO. Based on that evaluation, the CEO and CFO concluded that our disclosure controls and procedures were effective as at December 31, 2016.

MFC's Audit Committee has reviewed this MD&A and the 2016 Consolidated Financial Statements and MFC's Board of Directors approved these reports prior to their release.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control system was designed to provide reasonable assurance to management and the Board of Directors regarding the preparation and fair presentation of published financial statements in accordance with generally accepted accounting principles. All internal control systems, no matter how well designed, have inherent limitations due to manual controls. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Management maintains a comprehensive system of controls intended to ensure that transactions are executed in accordance with management's authorization, assets are safeguarded, and financial records are reliable. Management also takes steps to ensure that information and communication flows are effective and to monitor performance, including performance of internal control procedures.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2016 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") 2013 framework in Internal Control – Integrated Framework. Based on this assessment, management believes that, as of December 31, 2016, the Company's internal control over financial reporting is effective.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2016 has been audited by Ernst & Young LLP, the Company's independent registered public accounting firm that also audited the Consolidated Financial Statements of the Company for the year ended December 31, 2016. Their report expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2016.

Changes in Internal Control over Financial Reporting

No changes were made in our internal control over financial reporting during the year ended December 31, 2016 that have significantly affected, or are reasonably likely to significantly affect, our internal control over financial reporting.

Performance and Non-GAAP Measures

We use a number of non-GAAP financial measures to measure overall performance and to assess each of our businesses. A financial measure is considered a non-GAAP measure for Canadian securities law purposes if it is presented other than in accordance with generally accepted accounting principles used for the Company's audited financial statements. Non-GAAP measures include: Core Earnings (Loss); Core ROE; Diluted Core Earnings per Common Share; Core Earnings Before Income Taxes, Depreciation and Amortization ("core EBITDA"); Core Investment Gains, Constant Currency Basis (measures that are reported on a constant currency basis include percentage growth in Sales, Gross Flows, Premiums and Deposits, Core EBITDA, New Business Value, and Assets under Management and Administration); Assets under Administration; Premiums and Deposits; Assets under Management and Administration; Assets under Management; Capital; Embedded Value; New Business Value, Sales; Gross Flows and Net Flows. Non-GAAP financial measures are not defined terms under GAAP and, therefore, are unlikely to be comparable to similar terms used by other issuers. Therefore, they should not be considered in isolation or as a substitute for any other financial information prepared in accordance with GAAP.

Core earnings (loss) is a non-GAAP measure which we believe aids investors in better understanding the long-term earnings capacity and valuation of the business. Core earnings allows investors to focus on the Company's operating performance by excluding the direct impact of changes in equity markets and interest rates, changes in actuarial methods and assumptions as well as a number of other items, outlined below, that we believe are material, but do not reflect the underlying earnings capacity of the business. For example, due to the long-term nature of our business, the mark-to-market movements of equity markets, interest rates, foreign currency exchange rates and commodity prices from period-to-period can, and frequently do, have a substantial impact on the reported amounts of our assets, liabilities and net income attributed to shareholders. These reported amounts are not actually realized at the time and may never be realized if the markets move in the opposite direction in a subsequent period. This makes it very difficult for investors to evaluate how our businesses are performing from period-to-period and to compare our performance with other issuers.

We believe that core earnings better reflects the underlying earnings capacity and valuation of our business. We use core earnings as the basis for management planning and reporting and, along with net income attributable to shareholders, as a key metric used in our short and mid-term incentive plans at the total Company and operating segment level.

While core earnings is relevant to how we manage our business and offers a consistent methodology, it is not insulated from macro-economic factors which can have a significant impact. See "Quarterly Financial Information" below for reconciliation of core earnings to net income attributed to shareholders.

Any other future changes to the core earnings definition referred to below, will be disclosed.

Items included in core earnings:

1. Expected earnings on in-force policies, including expected release of provisions for adverse deviation, fee income, margins on group business and spread business such as Manulife Bank and asset fund management.
2. Macro hedging costs based on expected market returns.
3. New business strain.
4. Policyholder experience gains or losses.
5. Acquisition and operating expenses compared with expense assumptions used in the measurement of policy liabilities.
6. Up to $400 million of net favourable investment-related experience reported in a single year, which are referred to as "core investment gains". This means up to $100 million in the first quarter, up to $200 million on a year-to-date basis in the second quarter, up to $300 million on a year-to-date basis in the third quarter and up to $400 million on a full year basis in the fourth quarter. Any investment-related experience losses reported in a quarter will be offset against the net year-to-date investment-related experience gains with the difference being included in core earnings subject to a maximum of the year-to-date core investment gains and a minimum of zero, which reflects our expectation that investment-related experience will be positive through-the-business cycle. To the extent any investment-related experience losses cannot be fully offset in a quarter they will be carried forward to be offset against investment-related experience gains in subsequent quarters in the same year, for purposes of determining core investment gains. The $400 million threshold represents our through-the-business cycle estimate of net favourable investment-related experience that we reasonably expect to achieve annually based on historical experience even if we exceed or do not achieve this threshold in any given period. We monitor the appropriateness of the threshold and would adjust it, either to a higher or lower amount, in the future if we believed that our investment-related experience warranted such an adjustment. See also item 2 in "Items excluded from core earnings" below.
7. Earnings on surplus other than mark-to-market items. Gains on available-for-sale ("AFS") equities and seed money investments are included in core earnings.
8. Routine or non-material legal settlements.
9. All other items not specifically excluded.
10. Tax on the above items.
11. All tax related items except the impact of enacted or substantially enacted income tax rate changes.

Items excluded from core earnings:

1. The direct impact of equity markets and interest rates and variable annuity guarantee liabilities includes the items listed below.
   - The earnings impact of the difference between the net increase (decrease) in variable annuity liabilities that are dynamically hedged and the performance of the related hedge assets. Our variable annuity dynamic hedging strategy is not designed to completely offset the sensitivity of insurance and investment contract liabilities to all risks or measurements associated with the guarantees embedded in these products for a number of reasons, including; provisions for adverse deviation, fund performance, the portion of the interest rate risk that is not dynamically hedged, realized equity and interest rate volatilities and changes to policyholder behaviour.
   - Gains (charges) on variable annuity guarantee liabilities not dynamically hedged.
   - Gains (charges) on general fund equity investments supporting policy liabilities and on fee income.
   - Gains (charges) on macro equity hedges relative to expected costs. The expected cost of macro hedges is calculated using the equity assumptions used in the valuation of insurance and investment contract liabilities.
   - Gains (charges) on higher (lower) fixed income reinvestment rates assumed in the valuation of insurance and investment contract liabilities.
   - Gains (charges) on sale of AFS bonds and open derivatives not in hedging relationships in the Corporate and Other segment.
2. Net favourable investment-related experience in excess of $400 million per annum or net unfavourable investment-related experience on a year-to-date basis. As noted above, the $400 million threshold represents our through-the-business cycle estimate of net favourable investment-related experience we reasonably expect to achieve annually based on historical experience. Investment-related experience relates to fixed income trading, alternative long-duration asset returns, credit experience and asset mix changes. This favourable and unfavourable investment-related experience is a combination of reported investment experience as well as the impact of investing activities on the measurement of our policy liabilities.
3. Mark-to-market gains or losses on assets held in the Corporate and Other segment other than gains on AFS equities and seed money investments in new segregated or mutual funds.
4. Changes in actuarial methods and assumptions. As noted in the Critical Accounting and Actuarial Policies section above, policy liabilities for IFRS are valued in Canada under standards established by the Actuarial Standards Board. The standards require a comprehensive review of actuarial methods and assumptions to be performed annually. The review is designed to reduce the Company's exposure to uncertainty by ensuring assumptions for both asset related and liability related risks remain appropriate and is accomplished by monitoring experience and selecting assumptions which represent a current best estimate view of expected future experience, and margins that are appropriate for the risks assumed. By excluding the results of the annual reviews, core earnings assists investors in evaluating our operational performance and comparing our operational performance from period to period with other global insurance companies because the associated gain or loss is not reflective of current year performance and not reported in net income in most actuarial standards outside of Canada.
5. The impact on the measurement of policy liabilities of changes in product features or new reinsurance transactions, if material.
6. Goodwill impairment charges.
7. Gains or losses on disposition of a business.
8. Material one-time only adjustments, including highly unusual/extraordinary and material legal settlements or other items that are material and exceptional in nature.
9. Tax on the above items.
10. Impact of enacted or substantially enacted income tax rate changes.

Core return on common shareholders' equity ("core ROE ") is a non-GAAP profitability measure that presents core earnings available to common shareholders as a percentage of the capital deployed to earn the core earnings. The Company calculates core ROE using average common shareholders' equity.

Diluted core earnings per common share is core earnings available to common shareholders expressed per diluted weighted average common share outstanding.

The Company also uses financial performance measures that are prepared on a **constant currency basis**, which are non-GAAP measures that exclude the impact of currency fluctuations (from local currency to Canadian dollars at a total company level and from local currency to U.S. dollars in Asia). Amounts stated on a constant currency basis in this report are calculated, as appropriate, using the income statement and balance sheet exchange rates effective for the fourth quarter of 2016. Measures that are reported on a constant currency basis include growth in sales, gross flows and assets under management and administration.

Premiums and deposits is a non-GAAP measure of top line growth. The Company calculates premiums and deposits as the aggregate of (i) general fund premiums, net of reinsurance, reported as premiums on the Consolidated Statements of Income and investment contract deposits, (ii) segregated fund deposits, excluding seed money, ("deposits from policyholders"), (iii) mutual fund deposits, (iv) deposits into institutional advisory accounts, (v) premium equivalents for "administration services only" group benefit contracts ("ASO premium equivalents"), (vi) premiums in the Canadian Group Benefits reinsurance ceded agreement, and (vii) other deposits in other managed funds.

Premiums and deposits

($ millions)	Quarterly Results 4Q16	4Q15	Full Year Results 2016	2015
Net premium income and investment contract deposits	**$ 7,019**	$ 6,740	**$ 27,795**	$ 24,125
Deposits from policyholders	**7,620**	7,740	**30,504**	30,495
Mutual fund deposits	**20,806**	18,361	**75,040**	66,104
Institutional advisory account deposits	**10,711**	5,972	**18,280**	22,148
ASO premium equivalents	**833**	833	**3,318**	3,325
Group Benefits ceded premiums	**1,095**	1,051	**4,693**	4,296
Other fund deposits	**143**	140	**536**	510
Total premiums and deposits	**48,227**	40,837	**160,166**	151,003
Currency impact	**–**	35	**473**	4,073
Constant currency premiums and deposits	**$ 48,227**	$ 40,872	**$ 160,639**	$ 155,076

Assets under management and administration ("AUMA") is a non-GAAP measure of the size of the Company. It is comprised of the non-GAAP measures assets under management ("AUM"), which includes both assets of general account and external client assets for which we provide investment management services, and assets under administration ("AUA"), which includes assets for which we provide administrative services only. Assets under management and administration is a common industry metric for WAM businesses.

Assets under management and administration

As at December 31, ($ millions)	2016	2015
Total invested assets	**$ 321,869**	$ 307,506
Segregated funds net assets	**315,177**	313,249
Assets under management per financial statements	**637,046**	620,755
Mutual funds	**170,930**	160,020
Institutional advisory accounts (excluding segregated funds)	**77,661**	68,940
Other funds	**8,985**	7,552
Total assets under management	**894,622**	857,267
Other assets under administration	**82,433**	77,909
Currency impact	**–**	(17,459)
Constant currency assets under management and administration	**$ 977,055**	$ 917,717

Capital The definition we use for capital, a non-GAAP measure, serves as a foundation of our capital management activities at the MFC level. For regulatory reporting purposes, the numbers are further adjusted for various additions or deductions to capital as mandated by the guidelines used by OSFI. Capital is calculated as the sum of: (i) total equity excluding accumulated other comprehensive income ("AOCI") on cash flow hedges; and (ii) liabilities for preferred shares and capital instruments.

Capital

As at December 31, ($ millions)	2016	2015
Total equity	**$ 42,823**	$ 41,938
Adjusted for AOCI loss on cash flow hedges	**(232)**	(264)
Total equity excluding AOCI on cash flow hedges	**43,055**	42,202
Add liabilities for capital instruments	**7,180**	7,695
Total capital	**$ 50,235**	$ 49,897

Core EBITDA is a non-GAAP measure which Manulife uses to better understand the long-term earnings capacity and valuation of the business on a more comparable basis to how global asset managers are measured. Core EBITDA presents core earnings before the impact of interest, taxes, depreciation, and amortization. Core EBITDA was selected as a key performance indicator for WAM businesses, as EBITDA is widely used among asset management peers, and core earnings is a primary profitability metric for the Company overall.

Wealth and Asset Management

For the years ended December 31, ($ millions)	2016	2015
Core EBITDA	**$ 1,167**	$ 1,224
Amortization of deferred acquisition costs and other depreciation	**336**	327
Amortization of deferred sales commissions	**103**	106
Core earnings before income taxes	**728**	791
Core income tax (expense) recovery	**(99)**	(161)
Core earnings	**$ 629**	$ 630

Embedded value ("EV") is a measure of the present value of shareholders' interests in the expected future distributable earnings on in-force business reflected in the Consolidated Statement of Financial Position of Manulife, excluding any value associated with future new business. EV is calculated as the sum of the adjusted net worth and the value of in-force business. The adjusted net worth is the IFRS shareholders' equity adjusted for goodwill and intangibles, fair value of surplus assets, the carrying value of debt and preferred shares, and local statutory balance sheet, regulatory reserve, and capital for Manulife's Asian business. The value of in-force business in Canada and the U.S. is the present value of expected future IFRS earnings on in-force business less the present value of the cost of holding capital to support the in-force business under the MCCSR framework. The value of in-force business in Asia reflects local statutory earnings and capital requirements. The value of in-force excludes Manulife's WAM, Bank and Property and Casualty Reinsurance businesses.

New business value ("NBV") is the change in embedded value as a result of sales in the reporting period. NBV is calculated as the present value of shareholders' interests in expected future distributable earnings, after the cost of capital, on actual new business sold in the period using assumptions that are consistent with the assumptions used in the calculation of embedded value. NBV excludes businesses with immaterial insurance risks, such as Manulife's wealth and asset management businesses and Manulife Bank and the short-term Property and Casualty Reinsurance business. NBV is a useful metric to evaluate the value created by the Company's new business franchise.

New business value margin is calculated as NBV divided by annualized premium equivalents ("APE") excluding non-controlling interests. APE is calculated as 100% of annualized first year premiums for recurring premium products, and as 10% of single premiums for single premium products. Both NBV and APE used in the NBV margin calculation are after non-controlling interests and exclude wealth and asset management, Bank and Property and Casualty Reinsurance businesses. The NBV margin is a useful metric to help understand the profitability of our new business.

Sales are measured according to product type:
For individual insurance, sales include 100% of new annualized premiums and 10% of both excess and single premiums. For individual insurance, new annualized premiums reflect the annualized premium expected in the first year of a policy that requires premium payments for more than one year. Single premium is the lump sum premium from the sale of a single premium product, e.g. travel insurance. Sales are reported gross before the impact of reinsurance.

For group insurance, sales include new annualized premiums and administrative services only premium equivalents on new cases, as well as the addition of new coverages and amendments to contracts, excluding rate increases.

For Asia, annualized premium equivalent ("APE") sales is comprised of 100% of regular premiums/deposits and 10% of single premiums/deposits for both insurance and other wealth products. APE sales are presented for our Asia division as this metric is widely used by insurance companies in Asia.

Other Wealth sales include all new deposits into variable and fixed annuity contracts. As we discontinued sales of new Variable Annuity contracts in the U.S. in 1Q13, subsequent deposits into existing U.S. Variable Annuity contracts are not reported as sales. Asia variable annuity deposits are included in APE sales.

Bank new lending volumes include bank loans and mortgages authorized in the period.

Gross flows is a new business measure presented for WAM businesses and includes all deposits into the Company's mutual funds, college savings 529 plans, group pension/retirement savings products, private wealth and institutional asset management products. Gross flows is a common industry metric for WAM businesses as it provides a measure of how successful the businesses are at attracting assets.

Net flows is presented for our WAM businesses and includes gross flows less redemptions for our mutual funds, college savings 529 plans, group pension/retirement savings products, private wealth and institutional asset management products. Net flows is a common industry metric for WAM businesses as it provides a measure of how successful the businesses are at attracting and retaining assets.

Additional Disclosures

Contractual Obligations

In the normal course of business, the Company enters into contracts that give rise to obligations fixed by agreement as to the timing and dollar amount of payment.

As at December 31, 2016, the Company's contractual obligations and commitments are as follows:

Payments due by period ($ millions)	Total	Less than 1 year	1 to 3 years	3 to 5 years	After 5 years
Long-term debt[1]	**$ 10,139**	**$ 299**	**$ 1,522**	**$ 1,076**	**$ 7,242**
Liabilities for capital instruments[1]	**14,413**	**271**	**520**	**472**	**13,150**
Investment commitments	**7,505**	**2,933**	**2,164**	**1,312**	**1,096**
Operating leases	**966**	**135**	**188**	**138**	**505**
Insurance contract liabilities[2]	**729,227**	**9,913**	**13,490**	**18,071**	**687,753**
Investment contract liabilities[1]	**5,575**	**301**	**558**	**519**	**4,197**
Deposits from Bank clients	**17,919**	**15,157**	**1,936**	**826**	**–**
Other	**3,599**	**408**	**350**	**2,632**	**209**
Total contractual obligations	**$ 789,343**	**$ 29,417**	**$ 20,728**	**$ 25,046**	**$ 714,152**

[1] The contractual payments include principal, interest and distributions. The contractual payments reflect the amounts payable from January 1, 2017 up to and including the final contractual maturity date. In the case of floating rate obligations, the floating rate index is based on the interest rates as at December 31, 2016 and is assumed to remain constant to the final contractual maturity date. The Company may have the contractual right to redeem or repay obligations prior to maturity and if such right is exercised, total contractual obligations paid and the timing of payment could vary significantly from the amounts and timing included in the table.

[2] Insurance contract liabilities cash flows include estimates related to the timing and payment of death and disability claims, policy surrenders, policy maturities, annuity payments, minimum guarantees on segregated fund products, policyholder dividends, commissions and premium taxes offset by contractual future premiums on in-force contracts. These estimated cash flows are based on the best estimate assumptions used in the determination of insurance contract liabilities. These amounts are undiscounted and reflect recoveries from reinsurance agreements. Due to the use of assumptions, actual cash flows may differ from these estimates (see "Policy Liabilities"). Cash flows include embedded derivatives measured separately at fair value.

Legal and Regulatory Proceedings

The Company is regularly involved in legal actions, both as a defendant and as a plaintiff. The legal actions where the Company is a party ordinarily involve its activities as a provider of insurance protection and wealth management products, relating to reinsurance, or in its capacity as an investment adviser, employer and taxpayer. Other life insurers and asset managers, operating in the jurisdictions in which the Company does business, have been subject to a wide variety of other types of actions, some of which resulted in substantial judgments or settlements against the defendants; it is possible that the Company may become involved in similar actions in the future. In addition, government and regulatory bodies in Canada, the United States, Asia and other jurisdictions where the Company conducts business regularly make inquiries and, from time to time, require the production of information or conduct examinations concerning the Company's compliance with, among other things, insurance laws, securities laws, and laws governing the activities of broker-dealers.

Two class actions against the Company were certified and pending in Quebec and Ontario. The actions were based on allegations that the Company failed to meet its disclosure obligations related to its exposure to market price risk in its segregated funds and variable annuity guaranteed products. On January 31, 2017, we announced we reached an agreement to settle both of these class actions for a total payment of $69 million. The entire payment is covered by insurance and the Company made no admission of liability. The settlement agreement is subject to approval by both the Ontario and Quebec Courts.

Two putative class actions against JHUSA are pending, one in New York and one in California in which claims are made that JHUSA breached, and continues to breach, the contractual terms of certain universal life policies issued between approximately 1990 and 2006 by including impermissible charges in its cost of insurance ("COI") calculations. The Company believes that its COI calculations have been, and continue to be, in accordance with the terms of the policies and intends to vigorously defend these actions. Both cases are in the discovery stage and it is premature to attempt to predict any likely outcome or range of outcomes for these matters.

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Quarterly Financial Information

The following table provides summary information related to our eight most recently completed quarters:

As at and for the three months ended ($ millions, except per share amounts or otherwise stated)	Dec 31, 2016	Sept 30, 2016	Jun 30, 2016	Mar 31, 2016	Dec 31, 2015	Sept 30, 2015	Jun 30, 2015	Mar 31, 2015
Revenue								
Premium income								
Life and health insurance	**$ 6,093**	$ 5,950	$ 5,497	$ 5,728	$ 5,331	$ 5,092	$ 4,708	$ 4,589
Annuities and pensions	**908**	1,247	1,209	1,000	1,381	1,141	869	814
Premiums ceded, net of ceded commission and additional consideration relating to Closed Block reinsurance transaction	**–**	–	–	–	–	(7,996)	–	–
Net premium income	**7,001**	7,197	6,706	6,728	6,712	(1,763)	5,577	5,403
Investment income	**3,309**	3,568	3,213	3,300	2,899	2,708	3,216	2,642
Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities[1]	**(16,421)**	771	7,922	8,862	(1,916)	3,672	(10,161)	5,343
Other revenue	**2,637**	2,921	2,794	2,829	2,694	2,487	2,491	2,426
Total revenue	**$ (3,474)**	$ 14,457	$ 20,635	$ 21,719	$ 10,389	$ 7,104	$ 1,123	$ 15,814
Income (loss) before income taxes	**$ (285)**	$ 1,314	$ 947	$ 1,353	$ 136	$ 988	$ 650	$ 844
Income tax (expense) recovery	**450**	(117)	(231)	(298)	76	(316)	28	(116)
Net income	**$ 165**	$ 1,197	$ 716	$ 1,055	$ 212	$ 672	$ 678	$ 728
Net income attributed to shareholders	**$ 63**	$ 1,117	$ 704	$ 1,045	$ 246	$ 622	$ 600	$ 723
Reconciliation of core earnings to net income attributed to shareholders								
Total core earnings[2]	**$ 1,287**	$ 996	$ 833	$ 905	$ 859	$ 870	$ 902	$ 797
Other items to reconcile net income attributed to shareholders to core earnings								
Investment-related experience in excess of amounts included in core earnings	**–**	280	60	(340)	(361)	(169)	77	(77)
Direct impact of equity markets, interest rates and variable annuity guarantee liabilities	**(1,202)**	414	(170)	474	(29)	232	(309)	13
Impact of major reinsurance transactions, in-force product changes and recapture of reinsurance treaties	**–**	–	–	–	(52)	–	–	12
Change in actuarial methods and assumptions	**(10)**	(455)	–	12	(97)	(285)	(47)	(22)
Net impact of acquisitions and divestitures	**(25)**	(23)	(19)	(14)	(39)	(26)	(54)	(30)
Tax-related items	**(2)**	2	–	1	2	–	31	30
Other items	**15**	(97)	–	7	(37)	–	–	–
Net income attributed to shareholders	**$ 63**	$ 1,117	$ 704	$ 1,045	$ 246	$ 622	$ 600	$ 723
Basic earnings per common share	**$ 0.01**	$ 0.55	$ 0.34	$ 0.51	$ 0.11	$ 0.30	$ 0.29	$ 0.36
Diluted earnings per common share	**$ 0.01**	$ 0.55	$ 0.34	$ 0.51	$ 0.11	$ 0.30	$ 0.29	$ 0.36
Segregated funds deposits	**$ 8,247**	$ 8,291	$ 7,899	$ 8,693	$ 8,324	$ 8,401	$ 7,790	$ 8,270
Total assets (in billions)	**$ 721**	$ 742	$ 725	$ 696	$ 703	$ 682	$ 657	$ 687
Weighted average common shares (in millions)	**1,974**	1,973	1,972	1,972	1,972	1,971	1,971	1,936
Diluted weighted average common shares (in millions)	**1,980**	1,976	1,976	1,976	1,977	1,977	1,992	1,959
Dividends per common share	**$ 0.185**	$ 0.185	$ 0.185	$ 0.185	$ 0.170	$ 0.170	$ 0.170	$ 0.155
CDN$ to US$1 – Statement of Financial Position	**1.3426**	1.3116	1.3009	1.2970	1.3841	1.3394	1.2473	1.2682
CDN$ to US$1 – Statement of Income	**1.3343**	1.3050	1.2889	1.3724	1.3360	1.3089	1.2297	1.2399

(1) For fixed income assets supporting insurance and investment contract liabilities and for equities supporting pass-through products and derivatives related to variable hedging programs, the impact of realized and unrealized gains (losses) on the assets is largely offset in the change in insurance and investment contract liabilities.

(2) Core earnings is a non-GAAP measure. See “Performance and Non-GAAP Measures” above.

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Selected Annual Financial Information

As at and for the years ended December 31,			
($ millions, except per share amounts)	**2016**	2015	2014
Revenue			
Asia Division	**$ 19,294**	$ 14,002	$ 11,958
Canadian Division	**12,707**	10,065	13,773
U.S. Division	**20,558**	9,949	28,733
Corporate and Other	**778**	414	(76)
Total revenue	**$ 53,337**	$ 34,430	$ 54,388
Total assets	**$ 720,681**	$ 702,871	$ 579,406
Long-term financial liabilities			
Long-term debt	**$ 5,696**	$ 1,853	$ 3,885
Liabilities for preferred shares and capital instruments	**7,180**	7,695	5,426
Total financial liabilities	**$ 12,876**	$ 9,548	$ 9,311
Dividend per common share	**$ 0.74**	$ 0.665	$ 0.57
Cash dividend per Class A Share, Series 1[(1)]	**–**	0.5125	1.025
Cash dividend per Class A Share, Series 2	**1.1625**	1.1625	1.16252
Cash dividend per Class A Share, Series 3	**1.125**	1.125	1.125
Cash dividend per Class A Share, Series 4[(2)]	**–**	–	0.825
Cash dividend per Class 1 Share, Series 1[(3)]	**–**	–	1.05
Cash dividend per Class 1 Share, Series 3[(4)]	**0.7973**	1.05	1.05
Cash dividend per Class 1 Share, Series 4[(4)]	**0.2431**	–	–
Cash dividend per Class 1 Share, Series 5	**1.10**	1.10	1.10
Cash dividend per Class 1 Share, Series 7	**1.15**	1.15	1.15
Cash dividend per Class 1 Share, Series 9	**1.10**	1.10	1.10
Cash dividend per Class 1 Share, Series 11	**1.00**	1.00	1.00
Cash dividend per Class 1 Share, Series 13	**0.95**	0.95	0.95
Cash dividend per Class 1 Share, Series 15	**0.975**	0.975	0.792021
Cash dividend per Class 1 Share, Series 17	**0.975**	0.975	0.336575
Cash dividend per Class 1 Share, Series 19	**0.95**	0.9884	–
Cash dividend per Class 1 Share, Series 21[(5)]	**1.1411**	–	–
Cash dividend per Class 1 Share, Series 23[(6)]	**–**	–	–

(1) On June 19, 2015, MFC redeemed all of its 14 million outstanding Class A Shares Series 1.
(2) On June 19, 2014, MFC redeemed all of its 18 million outstanding Class A Shares Series 4.
(3) On September 19, 2014, MFC redeemed all of its 14 million outstanding Class 1 Shares Series 1.
(4) 1,664,169 of 8,000,000 Series 3 Shares were converted, on a one-for-one basis, into Series 4 Shares on June 20, 2016. 6,335,831 Series 3 Shares remain outstanding.
(5) On February 25, 2016, MFC issued 16 million of Series 21 Shares and on March 3, 2016, MFC issued an additional 1 million Series 21 Shares pursuant to the exercise in full by the underwriters of their option to purchase additional Series 21 Shares.
(6) On November 22, 2016, MFC issued 19 million of Non-cumulative Rate Reset Class 1 Shares Series 23. No dividends were paid in 2016.

Additional Information Available

Additional information relating to Manulife, including MFC's Annual Information Form, is available on the Company's website at www.manulife.com and on SEDAR at www.sedar.com.

Outstanding Shares – Selected Information

Common Shares

As at February 3, 2017, MFC had 1,975,685,118 common shares outstanding.

Exhibit 99.3

MANULIFE FINANCIAL CORPORATION

Annual Information Form

February 9, 2017

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GLOSSARY

In this annual information form ("AIF"), unless otherwise indicated or unless the context otherwise requires:

- all references to "MFC" and "Manufacturers Life" refer to Manulife Financial Corporation and The Manufacturers Life Insurance Company, respectively, not including their subsidiaries;
- MFC and its subsidiaries, including Manufacturers Life, are collectively referred to as "Manulife"; and
- references to "Company", "we", "us" and "our" refer to Manulife.

The following are brief explanations of certain terms as used in this AIF.

accepted actuarial practices — Canadian accepted actuarial practices as promulgated by the Actuarial Standards Board.

annuities — contracts that provide income payments at regular intervals, usually for a specified period (an annuity certain) or for the lifetime of the annuitant (a life annuity). Annuity contracts are offered on both an immediate and a deferred basis. Under immediate annuities, the payment of income commences at, or very shortly after, the date of issue of the contract. Under deferred annuity contracts, the payment of income commences on some specified future date, such as five years after the contract is issued. Contracts can be fixed or variable.

AUMA — assets under management and administration.

bancassurance — the sale of insurance and similar products through a bank's distribution channels.

cash value — the gross value for which an in-force policy can be surrendered.

COLI (corporate owned life insurance) — a specialized insurance product which provides tax-efficient funding vehicles for employee deferred compensation programs.

ETF — exchange traded fund.

529 College Savings plan – a mutual fund that offers a tax advantaged way for families to save on qualified higher education costs. Earnings in the mutual fund are tax free if withdrawn for the benefit of the payment of qualified higher education costs.

GAAP — Canadian generally accepted accounting principles as promulgated by CPA Canada, which for the Company is IFRS.

general fund — those assets and liabilities which a life insurance company reports on its consolidated statement of financial position and for which a life insurance company bears the investment risk. Products treated as part of the general fund include participating whole life insurance, universal life insurance, term life insurance, group life and health insurance and fixed-rate insurance, annuity and pension products, as well as reinsurance.

GIC — guaranteed interest contract (except where used in the context of products offered by Manulife Bank of Canada and Manulife Trust Company where GIC means "guaranteed investment certificate") – an investment guaranteed to receive a set interest rate over a predetermined term.

group life and health insurance — insurance which insures the lives of a group of people (group life) or provides coverage for medical and dental costs, and income replacement for disabilities to a group of people (group health) under a master contract. Typically used by employers to provide coverage for their employees.

ICA — the *Insurance Companies Act* (Canada), as amended, including the regulations thereunder which apply to insurance companies that are incorporated under Canadian federal law and to foreign insurance companies that operate in Canada on a branch basis.

IFRS (International Financial Reporting Standards) — as promulgated by the International Accounting Standards Board.

in-force — an insurance or annuity contract which has not expired or otherwise been terminated.

individual life insurance — insurance which pays a stipulated sum in the event of the death of a named individual.

Letters Patent of Conversion — the letters patent issued under the ICA to effect the conversion proposal of Manufacturers Life from a mutual company to a company with common shares effective September 23, 1999.

MCCSR (Minimum Continuing Capital and Surplus Requirements) — regulatory capital requirements imposed by OSFI for Canadian federally regulated life insurance companies.

Minister of Finance — the Minister of Finance (Canada) or any Minister of State who has been delegated any of the Minister's powers, duties and functions under the ICA.

NAIC (National Association of Insurance Commissioners) — an association of the chief insurance supervisory officials of each state, territory or possession of the United States.

OSFI — the Office of the Superintendent of Financial Institutions (Canada), the primary regulator of federal financial institutions and federal pension plans.

policy loan — a loan made to a policyholder based on the security of the cash value of a policy.

policyholder — the person who owns an insurance or annuity policy. Although the policyholder is usually the insured, in the case of group insurance the policyholder is usually the employer rather than the employee.

producer group — groups of agents and brokers who deal collectively with insurance companies in the areas of products, underwriting and compensation. A producer group also offers marketing and sales support to its members, as well as continuing education.

reinsurance — the acceptance by one or more insurers, called reinsurers, of a portion of the risk underwritten by another insurer which has directly contracted to provide the coverage. The legal rights of the policyholder are not affected by the reinsurance transaction and the insurer issuing the insurance contract remains primarily liable to the policyholder for payment of policy benefits.

retrocession — a form of reinsurance that involves the assumption of risk from a reinsurer rather than the direct writer of the policy or policies.

SCDA — The Standard Life Assurance Company of Canada.

SEC — the U.S. Securities and Exchange Commission, an agency of the United States federal government that has primary responsibility for enforcing federal securities laws and regulating the securities industry.

SEDAR — the System for Electronic Document Analysis and Retrieval, found at www.sedar.com.

segregated fund — a fund, having its own portfolio of investments, kept separate from the general fund of a life insurance company in connection with one or more insurance policies or annuity contracts under which the company's liability to the policyholders varies with the performance of the fund.

Superintendent — the Superintendent of Financial Institutions (Canada).

term life insurance — a life insurance policy which pays a stipulated sum on the death of the individual life insured, provided that death occurs within a specified number of years. There is usually no cash value.

third party administrator — a company that provides administrative support, including regulatory compliance, reporting and document processing, to sponsors of group plans.

UCITS — Undertakings for Collective Investment in Transferable Securities – securities that enable non-residents of the U.S. to purchase JH Investments' mutual fund offerings

underwriting — the process by which an insurance company assesses the risk inherent in an application for insurance prior to acceptance and issuance of a policy.

universal life insurance — a life insurance policy in which premiums, less expense charges, are credited to a policy account from which periodic charges for life insurance are deducted and to which interest and investment income are credited. Universal life insurance accumulates a cash value.

variable product — an insurance, annuity or pension product contract for which the reserves and/or benefits may vary in amount with the market value of a specified group of assets held in a segregated fund.

whole life insurance — a life insurance policy payable upon the death of the insured, with a fixed premium and accumulating cash values.

FINANCIAL PRESENTATION AND EXCHANGE RATE INFORMATION

The Company maintains its financial books and records in Canadian dollars and presents its financial statements in accordance with IFRS as applied to life insurance enterprises in Canada and the accounting requirements of the Superintendent. None of the accounting requirements of the Superintendent is an exception to IFRS.

Unless otherwise indicated, references in this AIF to "$," "Cdn.$" or "dollars" are to Canadian dollars. Principal exchange rates used for currency conversion to Canadian dollars for financial statements in this AIF are summarized in the following table:

	As at and for the year ended December 31		
U.S. dollar	**2016**	**2015**	**2014**
Statement of financial position	1.343	1.384	1.160
Statement of income	1.325	1.279	1.105
Japanese yen			
Statement of financial position	0.0115	0.0115	0.0097
Statement of income	0.0122	0.0106	0.0104

Notes: (1) Rates shown are the Canadian dollar price per U.S. dollar and Japanese yen. In accordance with IFRS, statement of financial position amounts are converted at rates on the dates indicated therein, while statement of income amounts are converted using the average rate for each quarter. The rate of exchange disclosed above for the annual statement of income is based on the rates in each quarter's statement of income. The annual rate is approximated as the average of the quarterly rates.
(2) Rates are based upon noon rates of exchange published by the Bank of Canada.

We do business in various jurisdictions outside Canada. Fluctuations between the Canadian dollar and foreign currencies have the effect of increasing or decreasing amounts presented in our financial statements. We present certain financial performance measures on a constant currency basis[1] to exclude the effect of fluctuations in these currencies versus the Canadian dollar. Amounts stated in this AIF on a constant currency basis are calculated, as appropriate, using the statement of financial position exchange rates as at December 31, 2016 and the statement of income exchange rates effective for the fourth quarter of 2016.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents are incorporated by reference in and form part of this AIF:

- MFC's Management's Discussion and Analysis for the year ended December 31, 2016, and
- MFC's audited annual consolidated financial statements and accompanying notes as at and for the year ended December 31, 2016.

These documents have been filed with securities regulators in Canada and with the SEC and may be accessed at www.sedar.com and www.sec.gov, respectively.

Any website address included in this AIF is an inactive textual reference only and information appearing on such website is not part of, and is not incorporated by reference in, this AIF.

[1] This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

From time to time, the Company makes written and/or oral forward-looking statements, including in this document and the documents incorporated by reference in this document. In addition, the Company's representatives may make forward-looking statements orally to analysts, investors, the media and others. All such statements are made pursuant to the "safe harbour" provisions of Canadian provincial securities laws and the U.S. *Private Securities Litigation Reform Act of 1995* .

The forward-looking statements in this document and the documents incorporated by reference in this document include, but are not limited to, statements with respect to the Company's possible or assumed future results set out under "Corporate Strategy", "General Development of the Business", "Business Operations" and "Government Regulation", core return on shareholders' equity expansion over the medium term and the drivers of such expansion, the contribution of recent major acquisitions and partnerships to annual core earnings over the medium term, the anticipated benefits and costs of the acquisition of Standard Life, and Manulife's expected capital position under the new Life Insurance Capital Adequacy Test ("LICAT") guideline and also relate to, among other things, our objectives, goals, strategies, intentions, plans, beliefs, expectations and estimates, and can generally be identified by the use of words such as "may", "will", "could", "should", "would", "likely", "suspect", "outlook", "expect", "intend", "estimate", "anticipate", "believe", "plan", "forecast", "objective", "seek", "aim", "continue", "goal", "restore", "embark" and "endeavour" (or the negative thereof) and words and expressions of similar import, and include statements concerning possible or assumed future results. Although we believe that the expectations reflected in such forward-looking statements are reasonable, such statements involve risks and uncertainties, and undue reliance should not be placed on such statements and they should not be interpreted as confirming market or analysts' expectations in any way.

Certain material factors or assumptions are applied in making forward-looking statements, and actual results may differ materially from those expressed or implied in such statements. Important factors that could cause actual results to differ materially from expectations include, but are not limited to, the factors identified under "Risk Management", "Risk Factors" and "Critical Accounting and Actuarial Policies" in MFC's Management's Discussion and Analysis for the year ended December 31, 2016, in the "Risk Management" note to MFC's consolidated financial statements for the year ended December 31, 2016 and elsewhere in MFC's filings with Canadian and U.S. securities regulators. The forward-looking statements in this document or in the documents incorporated by reference in this document are, unless otherwise indicated, stated as of the date hereof or the date of the document incorporated by reference, as the case may be, and are presented for the purpose of assisting investors and others in understanding the Company's financial position and results of operations, our future operations, as well as the Company's objectives and strategic priorities, and may not be appropriate for other purposes. The Company does not undertake to update any forward-looking statements, except as required by law.

CORPORATE STRUCTURE

History and Incorporation

Manulife Financial Corporation is a life insurance company incorporated under the ICA. MFC was incorporated under the ICA on April 26, 1999 for the purpose of becoming the holding company of Manufacturers Life following its demutualization. Manufacturers Life was incorporated on June 23, 1887, by a Special Act of Parliament of the Dominion of Canada. Pursuant to the provisions of the *Canadian and British Insurance Companies Act* (Canada), the predecessor legislation to the ICA, Manufacturers Life undertook a plan of mutualization and became a mutual life insurance company on December 19, 1968. As a mutual life insurance company, Manufacturers Life had no common shareholders and its board of directors was elected by its participating policyholders in accordance with the ICA. Pursuant to Letters Patent of Conversion, effective September 23, 1999, Manufacturers Life implemented a plan of demutualization under the ICA and converted to a life insurance company with common shares and became the wholly owned subsidiary of MFC. Following completion of MFC's merger with John Hancock Financial Services, Inc. ("JHFS") on April 28, 2004, Manufacturers Life and JHFS became sister companies. MFC owns all of the outstanding common shares of Manufacturers Life and, following the merger with JHFS, MFC indirectly owned all of the outstanding shares of common stock of JHFS.

On December 31, 2009, MFC consolidated its U.S. operating life insurance company subsidiaries and merged JHFS into The Manufacturers Investment Corporation, an indirect wholly owned subsidiary of Manufacturers Life. Also on December 31, 2009, John Hancock Life Insurance Company and John Hancock Variable Life Insurance Company,

both Massachusetts domiciled insurers and subsidiaries of JHFS, merged into John Hancock Life Insurance Company (U.S.A.) ("John Hancock USA"), an indirect wholly owned subsidiary of Manufacturers Life domiciled in Michigan.

On January 30, 2015, Manufacturers Life acquired the Canadian-based operations of Standard Life plc. On July 1, 2015, SCDA was wound-up into Manufacturers Life.

MFC's head office and registered office is located at 200 Bloor Street East, Toronto, Canada, M4W 1E5.

Intercorporate Relationships

The Company conducts its business activities through subsidiary companies in Canada, the United States, Barbados, Japan, the Philippines, Singapore, Indonesia, Taiwan, Thailand, Vietnam and Cambodia. The Company operates through branches of subsidiaries in Hong Kong, Macau, Barbados and Bermuda. In mainland China, the Company operates through joint ventures established with local companies. In Malaysia, the Company operates through a publicly traded corporation, which is approximately 59% owned by the Company. The Company also has asset management operations through subsidiary entities in England, Australia, New Zealand, and Brazil, as well as in certain of the other jurisdictions referred to above.

The significant subsidiaries of MFC, including direct and indirect subsidiaries, and MFC's direct and indirect voting interest therein, are listed in Note 21 (Subsidiaries) of MFC's consolidated financial statements for the year ended December 31, 2016. These companies are incorporated in the jurisdiction in which their head office or registered office is located.

CORPORATE STRATEGY

Our strategy is aligned with our Corporate Purpose – to help people achieve their dreams and aspirations, by putting customers' needs first and providing the right advice and solutions. Delivery of our strategy will provide exceptional experiences for our customers and sustainable, long-term growth for our shareholders. Manulife's corporate strategy includes three key themes:

1. Developing more holistic and long-lasting customer relationships;
2. Continuing to build and integrate our global wealth and asset management businesses; and
3. Leveraging skills and experiences across our international operations.

GENERAL DEVELOPMENT OF THE BUSINESS

Three Year History

In 2014, the Company announced two strategic acquisitions. In Canada, the Company announced an agreement to acquire the Canadian-based operations of Standard Life plc, which increased the Company's presence in Quebec and accelerated its growth strategy in Canada, particularly for its wealth and asset management businesses, including group retirement. The $4 billion acquisition was partially financed through the issuance of $2,260 million of subscription receipts, which automatically exchanged on a one-for-one basis for common shares of the Company when the acquisition closed on January 30, 2015. In the U.S., the Company announced an agreement to acquire the retirement plan services business of New York Life with New York Life net reinsuring 60% of the legacy John Hancock par life insurance block. By combining New York Life's strength and expertise in the mid-case and large-case retirement plan markets with the Company's leadership in the small-case plan market, the Company significantly expanded its market presence and become one of the major plan providers in the U.S. In Asia, the Company entered into several new bancassurance agreements.

In 2015, the Company closed the previously announced transactions with Standard Life plc. and New York Life. Additionally, we announced two strategic partnerships in Asia. The first strategic partnership announced was a 15-year regional life bancassurance agreement with DBS Bank Ltd ("DBS"). Effective January 1, 2016, the Company became the exclusive provider of bancassurance solutions to DBS's six million retail, wealth and small and medium-sized enterprises ("SME") customers in four mutually significant markets, namely Singapore, Hong Kong, Indonesia and mainland China. Under the agreement, initial payments were made by Manulife to DBS totaling US$1.2 billion with the final instalment made on January 4, 2016, all of which Manulife funded from internal resources. The second strategic partnership announced was a 15-year pension distribution partnership with Standard Chartered, which provides the Company the exclusive right to offer its Mandatory Provident Fund ("MPF") product to Standard

Chartered's customers in Hong Kong. As part of the arrangement, the Company acquired Standard Chartered's MPF and Occupational Retirement Schemes Ordinance ("ORSO") businesses. This arrangement significantly expanded the Company's pension business in Hong Kong, and strengthened its position as the second largest MPF provider as measured by assets under management and as the largest MPF provider as measured by net cash flows[2]. The Company also announced several smaller bancassurance agreements in Asia. In 2015, in addition to the common shares issued for the Standard Life acquisition, the Company issued $2.1 billion of subordinated debentures, and $2.6 billion of preferred shares and senior and medium term notes were redeemed or matured.

In 2016, the Company completed the previously announced Standard Chartered pension acquisition on November 1, 2016 and commenced the related 15-year MPF distribution partnership. In addition, the previously announced exclusive distribution partnership with DBS was launched. The Company also announced several smaller bancassurance agreements in Asia. In 2016, Manulife commenced its global funding strategy to diversify funding sources and broaden our investor base. Manulife raised $5.4 billion of capital in Canada, the U.S., and various Asian markets. In 2016, $1.1 billion of securities were redeemed or matured.

BUSINESS OPERATIONS

Information about the Company's business and operating segments is discussed below. Additional information about the Company's business and operating segments is contained in MFC's Management's Discussion and Analysis for the year ended December 31, 2016, on pages 26 to 47 inclusive.

The Company is a leading international financial services group that helps people achieve their dreams and aspirations by putting customers' needs first and providing the right advice and solutions. We operate as John Hancock in the United States and Manulife elsewhere. We provide financial advice, insurance, as well as wealth and asset management solutions for individuals, groups and institutions. Our principal operations are in Asia, Canada and the United States where we have served customers for more than 100 years. Manulife also provides investment management services with respect to the Company's general fund assets, segregated fund assets, mutual funds, and to institutional customers. The Company also offers specialized property and aviation retrocession products.

As at December 31, 2016, the Company had more than 34,000 employees and operated in more than 20 countries and territories. The Company's business is organized into three major operating divisions: Asia Division, Canadian Division and U.S. Division. Asset management services are also provided by the Company's Investment Division, through Manulife Asset Management. Each division has profit and loss responsibility and develops products, services, distribution and marketing strategies based on the profile of its business and the needs of its market. The Investment Division's external asset management business is included under the Corporate and Other reporting segment. The Company's property and casualty reinsurance business line is reported under the Corporate and Other reporting segment. This business line is a well-established participant in the highly specialized property retrocession market.

The approximate number of employees for each of the Company's divisions and reporting segments as at December 31, 2016 was as set out below[3].

Asia Division	10,600
Canadian Division	10,200
U.S. Division	6,700
Corporate and Other	3,600
Investment Division	3,400

SELECTED FINANCIAL STATISTICS BY DIVISION

The following table provides a breakdown by operating division of the Company's net income (loss) attributed to shareholders, core earnings (loss)[4], premiums and deposits[4] and assets under management and administration[4] as at and for the years ended December 31, 2016 and December 31, 2015.

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2 Based on The Gadbury Group MPF Market Shares Report as of September 2016.

3 Divisional numbers include Global Resourcing employees, who are located primarily in the Philippines, Malaysia and China and are assigned to the Divisions.

4 This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

Division ($ millions)	Net Income (Loss) Attributed to Shareholders		Core Earnings (Loss)[4]		Premiums and Deposits[4]		Assets Under Management and Administration[4]	
	2016	2015	2016	2015	2016	2015	2016	2015
Asia Division	1,141	1,105	1,495	1,234	37,511	28,800	121,212	106,438
Canadian Division	1,486	480	1,384	1,252	29,996	29,344	234,757	219,240
U.S. Division	1,134	1,460	1,615	1,466	74,272	70,618	545,350	537,947
Corporate and Other	(832)	(854)	(473)	(524)	18,387	22,240	75,736	71,551
Total	2,929	2,191	4,021	3,428	160,166	151,002	977,055	935,176

ASIA DIVISION

We are a leading provider of financial protection and wealth and asset management products in most of Asia's largest and fastest-growing economies, with operations in Japan, Hong Kong, Macau, mainland China, Taiwan, Indonesia, Singapore, the Philippines, Vietnam, Malaysia, Thailand and Cambodia. We are focused on helping our customers to achieve their dreams and aspirations, and that focus drives our growth strategy and underpins our commitment to the region.

We offer a broad portfolio of products and services including life and health insurance, annuities, mutual funds and retirement solutions that cater to the wealth and protection needs of individuals and corporate customers through a multi-channel distribution network, supported by a team of approximately 11,000 employees. Our distribution network includes more than 69,000 contracted agents, 100 bank partnerships and 1,000 independent agents, financial advisors and brokers selling our products. The bank partnerships include a regional partnership with DBS, which together with 5 other exclusive partnerships give us access to more than 18 million bank customers.

Hong Kong and Macau

Insurance and Other Wealth

The Company provides a comprehensive range of insurance solutions, including individual and group life products, to customers in Hong Kong and Macau. Individual products include life insurance, living benefits and wealth accumulation plans with insurance protection that can be tailored to meet customers' medium and long-term financial planning needs; while group products include group term life insurance and major medical and outpatient plans, which are provided mainly to small and medium-sized businesses.

Our insurance products are marketed through the Company's agency, bank and independent broker channels. The exclusive agency force continues to be the most significant distribution channel for the Company in the individual and group businesses. As at December 31, 2016, the Company had over 7,000 agents in Hong Kong and Macau. In tandem with continued growth in the agency channel, the Company is also actively expanding into other distribution channels including bancassurance and brokerage.

Wealth and Asset Management

Wealth and Asset Management operations offer pension products and mutual funds.

Our group pension business launched the MPF business line in 2000, and the Company continues to expand its MPF customer base, to both group and individual customers. The group pension business has developed primarily based on service rendered by our exclusive agents and a fund spectrum built on a multi-manager platform, along with our comprehensive e-administration service suite and focused marketing to individual MPF accounts. We also market our pension products in Macau through our exclusive agents located there. In 2016, we expanded the distribution of the MPF business to bank channels through our partnerships with DBS and Standard Chartered Bank.

Leveraging the global strength and investment expertise of the Company and working closely with specially appointed investment experts, the wealth and asset management operations also provide a diverse suite of funds to investors with various risk appetites, geographical, sector and asset class preferences.

The Company continues to focus on growing its wealth and asset management business by maintaining and strengthening existing distribution relationships through banks, brokers and our agency force and capitalizing on new distribution opportunities as they arise.

Japan

The Japanese market, characterized by an aging population, is a mature insurance market with a number of large international and domestic competitors. In Japan, the Company particularly focuses on meeting the needs of pre-retirees and retirees through advice-based, holistic planning across savings, investment and insurance. Product offerings are marketed through over 2,300 proprietary sales agents and over 1,000 independent agencies or managing general agents ("MGA") and bank partners. The Company uses technology to simplify the sales process and introduce innovative customer-focused solutions.

Insurance and Other Wealth

The Company continues to invest in the corporate and retail insurance business through a multi-channel distribution strategy. Corporate products are mainly sold through MGAs. A portfolio of retail product solutions is offered to meet various needs of customers across all of the Company's distribution channels. The introduction of an innovative self-disclosure underwriting solution has made the application process easier for customers and distributors.

The Company also continues to expand and enhance the other wealth product solutions by offering a variety of highly-regarded foreign currency denominated single and regular premium products. Distribution partners include many of the largest national (mega banks) and regional banks, securities firms as well as proprietary sales agents and MGAs.

Wealth and Asset Management

Our wealth and asset management operations consist of asset management and mutual fund distribution. Leveraging the access to Manulife's global asset management expertise, our asset management business has accumulated third party assets by offering competitive fixed income portfolios for institutional investors and the mutual fund business continues to expand its product offerings and distribution partners.

Other Markets

In Indonesia, the Philippines, Singapore, Taiwan, mainland China, Vietnam, Malaysia, Cambodia and Thailand (collectively, "Asia Other Territories"), the Company distributes a broad range of insurance and wealth accumulation and wealth and asset management products through a multi-channel distribution network. Products are marketed through approximately 60,000 exclusive agents, bank channels, including six exclusive partnerships, brokerage, independent financial advisors and telemarketing. In Singapore, we launched Manulife Financial Advisers in 2015, which provides a wide range of offerings for customers' life insurance, savings and retirement needs on behalf of Manulife as well as other trusted providers.

In Asia Other Territories, the Company continues to invest in its professional agency force. We are also focused on diversifying our distribution channels, strengthening bank partner relationships, improving our product competitiveness, broadening product offerings and developing our wealth and asset management businesses in order to provide solutions to address our customers' needs.

Insurance and Other Wealth

The Company offers a range of individual life and health insurance protection products. Sharia insurance products are offered in Indonesia to cater to the needs of the Muslim population. Group life and health insurance are also sold in Indonesia, the Philippines and mainland China.

Other Wealth includes single premium unit linked and individual annuity products with insurance protection to cater to the growing wealth accumulation needs of our customers in Indonesia, the Philippines, Singapore, Malaysia, and Thailand.

Insurance and other wealth products are marketed in Asia Other Territories through our multi-channel distribution network.

Wealth and Asset Management

The Company offers group retirement and savings products in Indonesia and mainland China and commenced the private retirement scheme business in Malaysia in 2012. Leveraging access to Manulife's global asset management expertise, mutual funds are also offered in Indonesia, Taiwan, Singapore, Malaysia, Vietnam, Thailand and mainland China. The mutual funds offered include a mix of investment strategies such as money market, equity, fixed income, Sharia and balanced funds in order to meet customers' risk appetite and wealth management needs. These products are marketed in Asia Other Territories through our multi-channel distribution network.

Competition

The life insurance industry in Asia remains competitive. Most Asian territories have concentrated markets with the top three players having over 40% market share of total premium income. As one of the few foreign insurance companies with a broad Asian footprint and scale in both the developed insurance markets and developing insurance markets, management believes that the Company is well positioned to benefit from the potential in the region. The Company's competitive advantages include: strong focus on customer experience, distinctive wealth and asset management capabilities enabling us to offer integrated solutions, large and growing proprietary agency force, growing distribution relationships with leading banks, and strong focus on digital customer engagement.

CANADIAN DIVISION

Serving one in three adult Canadians, we are a leading financial services organization in Canada. We offer a diverse range of protection, estate planning, investment and banking solutions through a diversified multi-channel distribution network, meeting the needs of a broad marketplace, supported by a team of more than 10,000 employees.

In our Insurance business, we offer broad-based insurance solutions to middle- and upper-income individuals, families, and business owners through a combination of competitive products, professional advice and quality customer service. Products include universal life, term life, whole life and living benefits products. We also provide group life, health and disability insurance solutions to Canadian employers; more than 21,000 Canadian businesses and organizations entrust their employee benefit programs to Manulife's Group Benefits. Life, health and specialty products, such as travel insurance, are also offered through alternative distribution channels, including sponsor groups and associations, as well as direct-to-customer marketing.

Our Wealth business offers a range of investment products and services to customers that span the investor spectrum, from those just starting to build their financial portfolio to individuals and families with complex retirement and estate planning needs. We provide personalized investment management, private banking and estate solutions to affluent clients. Manulife Bank offers flexible debt and cash flow management solutions as part of a customer's financial plan. We also provide Group Retirement solutions to Canadian employers, through defined contribution plans, deferred profit sharing plans, non-registered savings plans and employee share ownership plans.

Insurance

- ***Retail Insurance***

Retail Insurance offers broad-based insurance solutions to middle- and upper-income individuals, families, and business owners through a combination of competitive products, professional advice and quality customer service. We service more than 1.5 million in-force policies with a commitment of approximately $450 billion in death benefits. Products include universal life, term life, whole life and living benefits products.

Retail Insurance products are distributed primarily through independent advisors who sell our products, as well as those of other life insurance companies. A network of regional offices provides product, marketing and sales support, tax and estate planning expertise and financial planning tools to support independent advisors across Canada.

- ***Group Benefits***

Group Benefits offers a range of group life and health insurance products and services to more than 21,000 Canadian businesses and organizations of all sizes. Group Benefits helps protect the health and well-being of almost six million Canadians, offering traditional and flexible benefit programs that include features such as short-term and long-term disability protection, absence management solutions, critical illness, dental coverage, supplementary health and hospital coverage, drug plan coverage and accidental death and dismemberment protection.

Group Benefits is focused on four market segments: large, medium, small and trusteed plans. Group Benefits products are distributed through a number of distribution channels, including a national network of regional offices that serves major centres across Canada providing local services to clients and distribution partners. Effective client relationship management is key to building customer satisfaction and loyalty, and the Group Benefits distribution model is aligned to meet this objective. Account executives work with a network of consultants, brokers and advisors who have been contracted by client companies to analyze and recommend an appropriate benefits solution and provider. Client managers, supported by service representatives in each regional office, facilitate the implementation of new business and are responsible for ongoing relationship management.

Group Benefits focuses on delivering benefit solutions to meet the needs of its customers. For many employers, this means balancing the objective of providing their employees with highly valued benefits plans with the cost of those benefits. This is achieved by providing flexible, customized solutions that address employer concerns while improving the health and productivity of employees.

- ***Affinity Markets***

The Company is a leading provider of life, living benefits, health and travel insurance to affinity organizations in Canada, including professional, alumni and retiree associations and financial and retail institutions. Its products are also marketed directly to consumers, as well as through advisors and other intermediaries, such as travel agents and mortgage brokers. Affinity Markets insured approximately three million customers as at December 31, 2016. Sales and marketing approaches include direct mail, television advertising, response advertising and the internet.

Affinity Markets includes the International Group Program (“IGP ”**)** which provides international group employee benefits management for multinational corporations**.** IGP reinsures a portion of the group insurance contracts issued to subsidiaries and affiliates of multinational organizations through its global network of life insurance companies, called “Network Partners” and pools the profit and loss experience of these contracts. IGP has a leading position in the North American market and is seeking to grow in Europe and Asia.

Insurance Industry Competition

The Canadian life and health insurance industry is led by larger insurance companies. Smaller competitors and niche players keep pressure on prices in the more commodity-like products as they attempt to gain market share.

Retail Insurance’s primary competitors include major Canadian insurance companies and branches of other companies outside of Canada, with growing competition from banks. In the group benefits marketplace, the major competitors are large insurance companies. Regional carriers are also extremely competitive in some parts of the country, and small carriers that specialize in a particular niche product or segments, as well as third-party administrators, have increased their presence in the marketplace. Affinity Market’s competition is mainly from large Canadian insurance companies as well as specialty insurers who offer expertise in various product lines.

Wealth and Asset Management

- ***Mutual Funds***

Mutual funds offered under the Manulife Investments brand are targeted to middle- and upper-income investors both in the pre-retirement and retirement years.

Mutual funds are sold through advisors regulated by the Mutual Fund Dealers Association (“MFDA”) or the Investment Industry Regulatory Organization of Canada (“IIROC”). As of December 31, 2016, the Company had relationships with approximately 4,300 independent advisors, as well as approximately 27,700 general agency brokers and more than 43,400 full service brokers with investment dealer firms.

Manulife Investments' objective is to continue to grow our retail and institutional mutual fund business through diversified fund selection and strong fund performance, and by expanding our distribution partnerships.

- ***Group Retirement***

Group Retirement offers a breadth of flexible retirement savings solutions for more than 9,000 Canadian employers, including a well-diversified choice of investment managers and funds that includes multi-manager mandates; an array of reports and automated tools targeted at helping plan sponsors manage their programs easily while fulfilling governance requirements; and robust education, information and reporting tools for individual members.

The products offered include defined contribution pension plans, deferred profit sharing plans, non-registered savings plans, investment-only services for defined benefit plans, and employee share ownership plans. Product classification as Wealth and Asset Management compared with Other Wealth is primarily dependent on the underlying investments in the plans. If the investments are in guaranteed interest accounts, they are classified as Other Wealth while all other investments are classified as Wealth and Asset Management.

Group Retirement works with a network of market sources, typically brokers and consultants, to meet the needs of clients across the marketplace. Brokers concentrate on small and mid-sized enterprises, but occasionally represent larger customers, while consultants almost exclusively focus on large and jumbo-sized client companies. For brokers, the combination of a diverse fund line-up, internet presence and strong governance support makes Group Retirement a competitive presence in a growing market. Consultants have access to flexible plan design supported by a growing number of automated services and a proven implementation approach with custom education programs.

Group Retirement is focused on the development and enhancement of solutions to support the accumulation of retirement assets and uses of those assets to provide income in retirement.

- ***Advisory Services***

Advisory Services supports the Canadian Division through approximately 3,000 independent advisors located across Canada, who provide counsel for over $40 billion of clients' wealth assets and $100 billion in face value of insurance policies. Approximately 1,750 independent insurance advisors have direct contracts with Manufacturers Life for sales of insurance policies and 1,275 independent advisors are licensed through Manulife Securities, regulated by either the MFDA or IIROC.

Manulife Private Wealth ("MPW") provides affluent clients with an integrated approach to wealth management through branch locations in Toronto, Vancouver and, most recently, Hong Kong to serve high net worth investors in the process of emigrating to Canada. MPW provides high net wealth clients with a high level of personalized service from investment counselors and private bankers, leveraging the investment experience of Manulife Asset Management, banking products and services of Manulife Bank, products and services from Manulife Capital Markets, as well as strategies from Manulife's Tax and Estate Group.

Other Wealth, including Banking

- ***Retail Segregated Funds and Fixed Products***

Other wealth savings and retirement solutions offered under the Manulife Investments brand include segregated fund products, fixed annuities, GICs and structured products. The target market for Manulife Investments is middle- and upper-income individuals in the pre-retirement and retirement years.

The Company's segregated fund product offerings allow investors to build customized portfolios to meet financial goals through a series of flexible options for income, estate planning and investment needs with an investment line-up that includes 243 funds. Fixed rate products such as annuities and GICs are designed to provide individuals with a regular retirement income stream from funds deposited to their accounts.

Annuity products and GICs are distributed through independent advisors, advisors in general agencies and licensed representatives in full service brokerage firms. Mutual funds are sold through advisors regulated by the MFDA or IIROC. Structured products are sold by full service brokers who are regulated by IIROC.

- ***Group Retirement Fixed Products***

As noted above, investments in guaranteed interest accounts within Group Retirement are classified as Other Wealth.

- ***Banking***

Manulife Bank is a leader in banking solutions offered primarily through financial advisors, including savings and chequing accounts, GICs, lines of credit, investment loans, mortgages and other specialized lending programs. Its flagship product, Manulife One, enables customers to consolidate their personal finances into a single all-in-one financial account. This account combines savings and chequing with a traditional mortgage and home equity line of credit, offering customers the potential to pay down their debts more quickly and generate additional cash flow. The Bank's distribution network was recently restructured and consists of a team of highly trained District Vice Presidents, Business Development Consultants, Retail Lending Specialists, Business Banking Specialists, and an Inside Sales Team, who support advisors in providing customers with access to solutions-based banking products as part of a comprehensive financial planning strategy. At December 31, 2016, Manulife Bank had $22.4 billion in total assets and was Canada's ninth[5] largest domestic bank.

Wealth Management Market Competition

The wealth management market in Canada continues to be led by larger companies, with more than 60% of the mutual fund market controlled by the top ten companies based upon assets under management as of December 31, 2016; Manulife Investments ranked eighth according to this measure[6].

Key competitors for wealth management products and services (including Manulife Bank) are the other Canadian insurance companies, as well as mutual fund companies and banks.

U.S. DIVISION

Operating under the John Hancock brand in the U.S., our product suite includes wealth management and insurance products and is distributed primarily through affiliated and non-affiliated licensed financial advisors. We have a team of approximately 6,700 employees and our affiliated broker/dealer, Signator Investors, Inc., is comprised of a national network of independent firms with close to 2,200 registered representatives.

John Hancock Wealth Management offers a broad range of products and services focused on individuals and business markets, as well as institutional oriented products. John Hancock Investments ("JH Investments") offers a variety of mutual funds, UCITS, exchange traded funds ("ETF"), and 529 College Savings plans. John Hancock Retirement Plan Services ("JH RPS") provides employer sponsored retirement plans for companies ranging from start-ups to some of the largest corporations in America as well as servicing personal retirement accounts for former client employees. We also manage an in-force block of fixed deferred, variable deferred and payout annuity products.

John Hancock Insurance ("JH Insurance") offers a broad portfolio of insurance products, including universal, variable, whole, and term life insurance designed to provide estate, business, income protection and retirement solutions for high net worth and emerging affluent markets. We also manage an in-force block of long-term care insurance which is designed to cover the cost of long-term services and support, including personal and custodial care in a variety of settings such as the home, a community organization, or other facility in the event of an illness, accident, or through the normal effects of aging. Effective December 2, 2016, JH Long-Term Care ("JH LTC") discontinued new sales of our stand-alone retail individual long-term care product.

JH Insurance

JH Insurance provides life insurance products and services to select markets through a multi-channel distribution network, including Signator and direct-to-customer. These products are designed to provide insurance protection for individuals, estates, and businesses, as well as care advisory and retirement solutions and services.

JH Insurance provides a broad range of protection and accumulation oriented life insurance products to individuals to meet their protection, estate, business planning and other financial needs. The business has capacity to place large individual insurance policies due to large retention limits of US$30 million for single lives and US$35 million on survivorship cases. We are creating a more modern buying experience supported by the use of technology. Some of the initiatives that are allowing us to deliver upon this objective, include:

5 Based on information available through OSFI for assets as at December 31, 2016.

6 Source: Reporting from the Investment Funds Institute of Canada as of December 31, 2016.

- Our innovative wellness program partnership with The Vitality Group, Inc., the global leader in integrating wellness benefits with life insurance products. These products offer customers savings on premiums and the potential to earn valuable rewards and discounts by engaging in a healthy lifestyle.
- The launch of a direct-to-consumer distribution capability, including a tele-sales and service operation.
- Significant investments in streamlining our customer intake and underwriting processes, in order to reduce the time between the submission of policy applications and policy issuance.

JH Insurance offers term insurance, single and survivorship universal life, variable universal life insurance products and specialized COLI products. The rate of investment return on universal life insurance policies may change from time to time due to factors such as the investment performance of the universal life asset portfolio, but is subject to minimum guaranteed rates. Variable universal life insurance products offer clients an opportunity to participate in the equity market by investing in segregated funds.

JH Insurance has transitioned its product portfolio in recent years in response to the persistent low interest rate environment. The business has introduced new universal life products that are intended to perform well for customers in the current markets and have an improved risk profile for the Company. The products are positioned to highlight the value of flexibility and liquidity through policy cash values as well as the potential for improved performance if investment returns increase over time. In addition, our indexed universal life portfolio of products offer customers capital market upside potential through positive S&P 500 index returns while providing a minimum policy crediting rate of zero on an annual basis. The Company's policy is to fully hedge the risk related to the S&P 500 return. The sales of universal life products with lifetime low cost guarantees have been de-emphasized through pricing actions and represented approximately 1% of total U.S. life insurance sales in 2016.

JH LTC

JH LTC provides insurance to individuals and groups to cover the costs of long-term care services including nursing homes, assisted living care facilities, adult day care and at-home care when an insured is no longer able to perform the ordinary activities of daily living or is cognitively impaired. The business also administers long-term care benefits for employees of the United States federal government.

Effective December 2, 2016, we discontinued new sales of our stand-alone retail individual long-term care product. We are committed to servicing our existing customers and honouring our obligations to over 1.2 million long-term care policyholders. We intend to continue to offer long-term care coverage as an accelerated benefit rider to JH Insurance products. In addition, some of our existing policies are entitled to optional inflation buy-ups.

This decision will have no impact on the Federal Long Term Care program, as that program is managed separately from our individual long-term care business.

John Hancock Wealth Management

John Hancock Wealth Management provides a variety of investment and retirement savings solutions and services to select individual and business markets. John Hancock Wealth Management is focused on growth of its higher return fee-based asset management businesses. We will seek to accomplish this by capitalizing on our strong brand name, innovative and broad product offerings, expanding distribution opportunities and superior customer service, while maintaining strong financial discipline and risk management in the products we offer.

JH RPS

JH RPS offers retirement plan record keeping, investment administration, communication and consulting services to individuals, businesses and unions of all sizes. With its full suite of products, JH RPS can provide small plans with high levels of service using a 401(k) group annuity product "JH Signature" in partnership with third party administrators. Larger companies and unions use "JH Enterprise" and "JH Total Retirement Services" products which offer full support for the more complex retirement structures typical of larger organizations, including defined benefit and non-qualified deferred compensation arrangements. JH RPS is expanding its ability to offer personalized retirement investment advice to plan participants through the use of digital capabilities.

JH RPS's products are marketed by sales account executives primarily to third party advisors and consultants, including those who specialize in retirement plans. JH RPS provides support to third party administrators in the form of direct data links, training, marketing, educational programs and access to e-commerce functionality. JH RPS has also established advisory councils of third party administrators, plan sponsors and advisors that provide feedback on product development and marketing strategies. As part of its commitment to the growing broker-dealer and financial planner channels, JH RPS offers on-line marketing, educational and client/broker-dealer administrative support through its broker website.

JH Investments

JH Investments combines diverse investment capabilities and risk-adjusted performance with a unique manager-of-manager approach. Today, JH Investments' network of specialists includes 74 teams at 28 firms. They provide a wide range of products to help serve the needs of investors, including traditional and alternative mutual funds, ETFs, UCITS for non-U.S. investors, closed-end funds, managed accounts, target-date retirement portfolios, Environmental, Social, and Governance funds, and 529 College Savings plans. JH Investments distributes its products primarily through financial intermediaries and advice-driven platforms.

JH Annuities

JH Annuities administers an in-force block of fixed and variable annuity business consisting of approximately US$66 billion of AUMA and over 860,000 contracts and participants. Sales were discontinued in March, 2013.

Competition

Competition in the U.S. varies across product lines, but is primarily with other large insurance and wealth management firms that distribute comparable products through similar channels. With our recent entry into the direct-to-customer insurance channel and our ongoing development of a customer-facing advice platform, competition has expanded to include traditional advice providers and emerging digital advice platforms. Competitive advantage is based on the ability to develop flexible product features to meet individual customer needs, and to develop and service a variety of distribution channels. Our competitive position is enhanced by our scale and leadership in the markets we operate in, as well as the strength of the John Hancock brand.

CORPORATE AND OTHER

Corporate and Other is comprised of investment performance on assets backing capital, net of amounts allocated to operating divisions, financing costs, Investment Division's external asset management business (Manulife Asset Management), our Property and Casualty ("P&C") Reinsurance business; and run-off reinsurance business lines including variable annuities and accident and health.

INVESTMENT DIVISION

Manulife's Investment Division manages the Company's general fund assets and, through Manulife Asset Management ("MAM"), provides comprehensive asset management and asset allocation solutions to institutional clients and investment funds, and investment management services to retail clients through Manulife and John Hancock product offerings.

We have expertise managing a broad range of investments including public and private bonds, public and private equities, commercial mortgages, real estate, power and infrastructure, timberland, farmland, and oil and gas. With a team of more than 3,400 employees, the Investment Division has a physical presence in key markets, including the United States, Canada, the United Kingdom, Hong Kong, Japan, and Singapore. In addition, MAM has a joint venture asset management business in mainland China, Manulife TEDA Fund Management Company Ltd.

General Fund

Our investment philosophy for the General Fund is to invest in an asset mix that optimizes our risk-adjusted returns and matches the characteristics of our underlying liabilities. We follow a bottom-up approach which combines our strong asset management skills with an in-depth understanding of the characteristics of each investment. We invest in a diversified mix of assets, including a variety of alternative long-duration assets. Our diversification strategy has

historically produced superior risk adjusted returns while reducing overall risk. We use a disciplined strategy across all asset classes and we do not chase yield in the riskier end of the fixed income market. This strategy has resulted in a well-diversified, high quality investment portfolio, which has historically delivered strong investment-related experience through-the-cycle.

Further information on the invested assets and the Risk Management and Asset Liability Management Strategies can be found in MFC's Management's Discussion and Analysis for the year ended December 31, 2016.

Manulife Asset Management

MAM provides comprehensive asset management solutions to institutional clients (such as pension plans, foundations, endowments and financial institutions) and investment funds, and investment management services to retail clients through Manulife and John Hancock product offerings.

Competition

Our competitors are made up of a disparate group of global institutional asset management companies, each of whom competes with us in distinct asset classes. MAM's key competitive differentiators include offering private and public multi-assets to holistically address client needs, providing alpha-focused active management in a boutique environment, and leveraging best-in-class global capabilities and expertise.

Further information on the assets managed by MAM and its strategy can be found in MFC's Management's Discussion and Analysis for the year ended December 31, 2016.

PUBLIC ACCOUNTABILITY STATEMENT

We report on the economic, environmental and social dimensions of our products and services, operations and community activities annually in Manulife's Public Accountability Statement. The report details our commitment to social responsibility, environmental sustainability, excellence in business conduct and corporate governance. This document can be found in the Corporate Citizenship section of the Company's website at www.manulife.com/pas.

RISK FACTORS

Manulife is a leading international financial services group offering insurance, wealth and asset management products and other financial services. These businesses subject the Company to a broad range of risks. Our goal is to strategically optimize risk taking and risk management to support long-term revenue, earnings and capital growth. We seek to achieve this by capitalizing on business opportunities and strategies with appropriate risk/return profiles; establishing sufficient management expertise to effectively execute strategies, and to identify, understand and manage underlying inherent risks; pursuing strategies and activities aligned with the Company's corporate and ethical standards and operational capabilities; pursuing opportunities and risks that enhance diversification; and making risk taking decisions with analyses of inherent risks, risk controls and mitigations, and risk/return trade-off.

An explanation of the broad categories of risks facing the Company and Manulife's risk management strategies for each category as well as a discussion of the specific risks and uncertainties to which our business operations and financial condition are subject can be found in the sections entitled "Risk Management" and "Risk Factors", respectively, in MFC's Management's Discussion and Analysis for the year ended December 31, 2016.

As noted under "Caution Regarding Forward-Looking Statements", forward-looking statements involve risks and uncertainties and actual results may differ materially from those expressed or implied in such statements. Strategic risk, market risk, liquidity risk, credit risk, insurance risk and operational risk are the major categories of risk described in the sections of MFC's Management's Discussion and Analysis referred to above. These risk factors should be considered in conjunction with the other information in this AIF and the documents incorporated by reference herein.

GOVERNMENT REGULATION

As an insurance company, Manulife is subject to regulation and supervision by governmental authorities in the jurisdictions in which it does business. In Canada, the Company is subject to both federal and provincial regulation.

In the United States, the Company is primarily regulated by each of the states in which it conducts business and by federal securities laws. The Company's Asia operations are similarly subject to a variety of regulatory and supervisory regimes in each of the Asian jurisdictions in which the Company operates, which vary in degree of regulation and supervision.

CANADA

Manulife is governed by the ICA. The ICA is administered, and activities of the Company are supervised, by OSFI. The ICA permits insurance companies to offer, directly or through subsidiaries or through networking arrangements, a broad range of financial services, including banking, investment counseling and portfolio management, mutual funds, trust services, real property brokerage and appraisal, information processing and merchant banking services.

The ICA requires the filing of annual and other reports on the financial condition of the Company, provides for periodic examinations of the Company's affairs, imposes restrictions on transactions with related parties, and sets forth requirements governing reserves for actuarial liabilities and the safekeeping of assets and other matters. OSFI supervises Manulife on a consolidated basis (including capital adequacy) to ensure that OSFI has an overview of the group's activities. This includes the ability to review both insurance and non-insurance activities conducted by subsidiaries of Manulife with supervisory power to bring about corrective action.

Capital Requirements

The ICA requires Canadian insurance companies to maintain adequate levels of capital, at all times.

Capital requirements for MFC and Manufacturers Life are governed by the MCCSR, with MCCSR ratios prepared on a consolidated basis. The MCCSR ratio compares Available Capital to Required Capital. Available Capital includes instruments such as common equity, qualifying preferred shares, qualifying innovative tier 1 instruments, the participating account, hybrid capital instruments and subordinated debt. Certain deductions are made from Available Capital including deductions for goodwill, controlling interests in non-life financial corporations and non-controlled substantial investments. Required Capital is determined by applying factors to specified risks or using models to determine capital requirements for a given risk. Capital is held for asset default risks, mortality/morbidity/lapse risks, changes in the interest rate risk environment, segregated funds risk, off balance sheet activities and foreign exchange risk.

The minimum regulatory MCCSR ratio for MFC and Manufacturers Life is 120%; in addition, Manufacturers Life is subject to a supervisory target ratio of 150%. OSFI may require that a higher amount of capital be available, taking into account such factors as operating experience and diversification of asset or insurance portfolios. OSFI expects each insurance company to establish a target capital level that provides a cushion above minimum requirements. This cushion allows for coping with volatility in markets and economic conditions, and enhances flexibility in capital management to consider aspects such as innovations in the industry, consolidation trends and international developments. MFC endeavours to manage its affairs so that Manufacturers Life has an MCCSR ratio that is above the supervisory target. MFC also seeks to ensure that there are sufficient margins for equity market and interest rate declines and takes into account other factors that could adversely impact the capital position in the foreseeable future. At December 31, 2016, the MCCSR ratios for MFC and Manufacturers Life were 199% and 230%, respectively.

OSFI may intervene and assume control of a Canadian life insurance company if it deems the amount of available capital insufficient. Capital requirements may be adjusted by OSFI as experience develops, the risk profile of Canadian life insurers changes, or to reflect other risks.

OSFI will be implementing a revised approach to the regulatory capital framework in Canada to come into effect in 2018. In September 2016, OSFI released the final Life Insurance Capital Adequacy Test ("LICAT") guideline that will replace the MCCSR framework in 2018. See the section entitled "Risk Management – Regulatory Updates" in MFC's Management's Discussion and Analysis for the year ended December 31, 2016 for further information about LICAT.

See the section entitled "Risk Factors - Our insurance businesses are heavily regulated, and changes in regulation may reduce our profitability and limit our growth" in MFC's Management's Discussion and Analysis for the year ended December 31, 2016 for information about regulatory initiatives and other developments which could impact MFC's capital position.

Regulated subsidiaries of MFC must maintain minimum levels of capital, which are based on the local capital regime and the statutory accounting basis in each jurisdiction. The Company maintains capital in excess of the minimum required, in all foreign jurisdictions in which the Company does business.

Investment Powers

Under the ICA, Manulife must maintain a prudent portfolio of investments and loans, subject to certain overall limitations on the amount it may invest in certain classes of investments, such as commercial loans. Additional restrictions (and in some cases, the need for regulatory approvals) limit the type of investment that the Company can make in excess of 10% of the voting rights or 25% of the equity of any entity.

Restrictions on Shareholder Dividends and Capital Transactions

The ICA prohibits the declaration or payment of any dividend on shares of an insurance company if there are reasonable grounds for believing an insurance company does not have adequate capital and adequate and appropriate forms of liquidity, or declaration or the payment of the dividend would cause the insurance company to be in contravention of any regulation made under the ICA respecting the maintenance of adequate capital and adequate and appropriate forms of liquidity, or any direction made to the company by the Superintendent. The ICA also requires an insurance company to notify the Superintendent of the declaration of a dividend at least 15 days prior to the date fixed for its payment. Similarly, the ICA prohibits the purchase for cancellation of any shares issued by an insurance company or the redemption of any redeemable shares or other similar capital transactions, if there are reasonable grounds for believing that the company does not have adequate capital and adequate and appropriate forms of liquidity, or the purchase or the payment would cause the company to be, in contravention of any regulation made under the ICA respecting the maintenance of adequate capital and adequate and appropriate forms of liquidity, or any direction made to the company by the Superintendent. These latter transactions would require the prior approval of the Superintendent. There is currently no direction against MFC or Manufacturers Life paying a dividend or redeeming or purchasing their shares for cancellation.

Appointed Actuary

In accordance with the ICA, the Board of Directors of the Company has appointed the Appointed Actuary who must be a Fellow of the Canadian Institute of Actuaries. The Appointed Actuary is required to value the policy liabilities of Manulife as at the end of each financial year in accordance with accepted actuarial practices with such changes as may be determined by the Superintendent and any direction that may be made by the Superintendent, including selection of appropriate assumptions and methods. The Appointed Actuary must make a report in the prescribed form on the valuation including providing an opinion as to whether the consolidated financial statements fairly present the results of the valuation. At least once in each financial year, the Appointed Actuary must meet with the Board of Directors, or the Audit Committee, to report, in accordance with accepted actuarial practice and any direction that may be made by the Superintendent, on the current and expected future financial condition of the Company. The Appointed Actuary is also required to report to the President and Chief Executive Officer and the Chief Financial Officer of the Company if the Appointed Actuary identifies any matters that, in the Appointed Actuary's opinion, have material adverse effects on the financial condition of the Company and require rectification.

Prescribed Supervisory Information

The Supervisory Information (Insurance Companies) Regulations made under the ICA (the "Supervisory Information Regulations") prohibit the Company from disclosing, directly or indirectly, any "prescribed supervisory information" relating to it or its affiliates, with certain limited exceptions. The Supervisory Information Regulations define "prescribed supervisory information" broadly in terms of assessments, recommendations, ratings and reports concerning the Company that are made by or at the request of the Superintendent and certain regulatory actions taken with respect to the Company, including: (i) any rating assigned to assess the financial condition of the Company or similar ratings; (ii) any report prepared by or at the request of the Superintendent or any recommendation made by the Superintendent as a result of an examination or other supervisory review of the Company; (iii) any categorization of the Company as being at a stage of intervention during which the Superintendent may exercise additional supervisory powers over the Company that vary with the stage (from stage 0 - no significant problem/normal activities to stage 4 - non-viability/insolvency imminent); (iv) any order of the Superintendent that the Company increase its capital or provide additional liquidity; (v) any prudential agreement to implement any measure designed to maintain or improve the Company's safety or soundness entered into between the Superintendent and the Company; and (vi) any direction of the Superintendent that the Company cease or refrain from committing, or remedy, unsafe or unsound practices in conducting its business.

The Supervisory Information Regulations permit the Company to disclose, to the public or otherwise, an order, prudential agreement or direction described in (iv), (v) and (vi) above if the Company considers it to contain a material fact or material change that is required to be disclosed under applicable securities law. The Supervisory Information Regulations also permit the Company to disclose prescribed supervisory information to underwriters in a public or private offering of securities if the Company ensures that the information remains confidential. The Supervisory Information Regulations do not prohibit or restrict the Company from disclosing, publicly or otherwise, any facts relating to the business, operations or capital of the Company, provided that the Company does not indirectly disclose any prescribed supervisory information.

Provincial Insurance Regulation

The Company is also subject to provincial regulation and supervision in each province and territory of Canada in which it carries on business. Provincial insurance regulation is concerned primarily with the form of insurance contracts and the sale and marketing of insurance and annuity products, including the licensing and supervision of insurance producers. Individual variable insurance contracts and the underlying segregated funds to which they relate are also subject to guidelines established by the Canadian Council of Insurance Regulators (together with the Canadian Life and Health Insurance Association Inc.) which guidelines have regulatory standing in Ontario, are consistent with guidelines in Quebec adopted under the authority of Quebec insurance legislation, and are generally followed by the regulators of all other provinces. These guidelines govern a number of matters relating to the sale of these products and the administration of the underlying segregated funds. Manufacturers Life is licensed to transact business in all provinces and territories of Canada.

Provincial/Territorial Securities Laws

The Company's Canadian mutual fund and asset management businesses are subject to Canadian provincial and territorial securities laws. Manulife Asset Management Limited ("MAML") is registered as a portfolio manager with the securities commissions in all Canadian provinces and territories, as an investment fund manager in the provinces of Ontario, Newfoundland and Labrador and Quebec, as a commodity trading manager in Ontario, and as a derivatives portfolio manager in Quebec. Manulife Asset Management Investments Inc. ("MAMII") is registered as an exempt market dealer with the securities commissions in all Canadian provinces and territories. MAML and MAMII are subject to regulation by the applicable provincial securities regulators. Manulife Securities Investment Services Inc. ("MSISI") is registered under provincial and territorial securities laws to sell mutual funds across Canada and is subject to regulation by the applicable provincial and territorial securities regulators as well as the MFDA, a self-regulatory organization. MSISI is also registered as an exempt market dealer in all Canadian provinces and territories. Manulife Securities Incorporated ("MSI") is registered under provincial and territorial securities laws to sell investments across Canada and is subject to regulation by the provincial and territorial securities regulators as well as IIROC, a self-regulatory organization. MSI is also registered as a derivatives dealer in Quebec.

Consumer Protection for Financial Institution Failure

Assuris was created by the life and health insurance industry in Canada in 1990 to provide Canadian policyholders with protection in the event of the insolvency of their insurance company. Assuris is funded by its member insurance companies, including Manufacturers Life and Manulife Assurance Company of Canada. Member companies of Assuris are assessed to build and maintain a liquidity fund at a minimum level of $100 million. Members are then primarily subject to assessment on an "as needed" basis. Assessments are calculated based on each member's MCCSR, subject to adjustments where the member operates in foreign jurisdictions.

The Canadian Investor Protection Fund ("CIPF") has been created to provide clients with protection, within defined limits, in the event of the insolvency of their investment dealer. The CIPF is funded by its member investment dealers, including MSI.

The MFDA Investor Protection Corporation ("IPC") has been created to provide clients with protection, within defined limits, in the event of the insolvency of their mutual fund dealer. The IPC is funded by its member mutual fund dealers, including MSISI.

The Canada Deposit Insurance Corporation ("CDIC") is a federal crown corporation created by parliament in 1967 to protect deposits made with member financial institutions in case of their failure. CDIC member institutions, including Manulife Bank and its subsidiary Manulife Trust, fund deposit insurance through premiums paid on the insured deposits that they hold.

UNITED STATES

General Regulation at the State Level

The various states in the United States have laws regulating transactions between insurers and other members of insurance holding company systems. Transactions between the Company's U.S. insurers and their affiliates are subject to regulation by the states in which such insurance subsidiaries are domiciled and for certain limited matters, states in which they transact business. Most states have enacted legislation that requires each insurance holding company and each insurance subsidiary in an insurance holding company system to register with, and be subject to regulation by, the insurance regulatory authority of the insurance subsidiary's state of domicile. The Company's principal U.S. life insurance subsidiaries are John Hancock USA, John Hancock Life Insurance Company of New York ("JHNY") and John Hancock Life & Health Insurance Company ("JHLH"). They are domiciled in Michigan, New York and Massachusetts, respectively. Under such laws, the insurance subsidiaries are required to annually furnish financial and related information concerning the operations of companies within the holding company system that may materially affect the operations, management or financial condition of insurers within the system. These reports are also filed with other insurance departments on request. In addition, such laws provide that all transactions within an insurance holding company system must be fair and equitable, and following any such transactions, each insurer's policyholder surplus must be both reasonable in relation to its outstanding liabilities and adequate for its needs.

The laws of the various states also establish regulatory agencies with broad administrative powers, such as the power to approve policy forms, grant and revoke licenses to transact business, regulate trade practices, license agents, require financial statements and prescribe the type and amount of investment permitted. State insurance regulatory authorities regularly make inquiries, hold investigations and administer market conduct examinations with respect to an insurer's compliance with applicable insurance laws and regulations.

Insurance companies are required to file detailed annual statements with state insurance regulators in each of the states in which they do business and their business and accounts are subject to examination by such regulators at any time. Quarterly statements must also be filed with the state insurance regulator in the insurer's state of domicile and with the insurance departments of many of the states in which the insurer does business. Insurance regulators may periodically examine an insurer's financial condition, adherence to statutory accounting practices and compliance with insurance department rules and regulations.

State insurance departments, as part of their routine oversight process, conduct detailed examinations of the books, records and accounts of insurance companies domiciled in their states. These examinations are generally conducted in accordance with the examining state's laws and the guidelines promulgated by the NAIC. Each of the Company's principal U.S. domiciled insurance subsidiaries is subject to periodic examinations by its respective domiciliary state insurance regulators. The latest published examination reports issued by each such insurance department did not raise any material issues or adjustments.

In addition, state regulatory authorities, industry groups and rating agencies have developed several initiatives regarding market conduct. For example, the NAIC has adopted the NAIC Life Insurance Illustrations Model Regulation, which applies to group and individual life insurance policies and certificates (other than variable policies and certificates), and the Market Conduct Handbook. More than 35 states have adopted all or major segments of the model. However, the Market Conduct Handbook can be used by all state regulators in conducting market conduct examinations.

Investment Powers

The Company's U.S. insurance subsidiaries are subject to laws and regulations that require diversification of their investment portfolios and limit the amount of investments in certain investment categories such as below investment grade bonds and real estate. Failure to comply with these laws and regulations may cause investments exceeding regulatory limitations to be treated as non-admitted assets for the purposes of measuring statutory surplus and in some circumstances would require divestiture of the non-qualifying assets.

Minimum Statutory Surplus and Capital

U.S. domiciled life insurance subsidiaries of the Company are required to have minimum statutory surplus and capital of various amounts, depending on the state in which they are licensed and the types of business they transact.

NAIC IRIS Ratios

The NAIC uses a set of financial relationships or "tests," known as the Insurance Regulatory Information System ("IRIS"), which are designed for the early identification of insurance companies which might warrant special attention by insurance regulatory authorities. Insurance companies submit data annually to the NAIC, which in turn analyzes the data utilizing 12 ratios, each with defined "usual ranges." Having ratios that fall outside the usual range does not necessarily indicate that a company experienced unfavourable results. An insurance company may fall out of the usual range for one or more ratios because of transactions that are favourable (such as large increases in surplus) or are immaterial or eliminated at the consolidated level. Each company's ratios are reviewed annually and are assigned a ranking by a team of examiners and financial analysts at the NAIC for the purpose of identifying companies that require immediate regulatory attention. The rankings are not reported to the companies and are only available to regulators.

Risk-Based Capital Requirements

In order to enhance the regulation of insurer solvency, state regulators have adopted the NAIC model law implementing RBC requirements for life insurance companies. The requirements are designed to monitor capital adequacy and to raise the level of protection that statutory surplus provides for policyholders. The model law measures four major areas of risk facing life insurers: (i) the risk of loss from asset defaults and asset fluctuation; (ii) the risk of loss from adverse mortality and morbidity experience; (iii) the risk of loss from mismatching of asset and liability cash flows due to changing interest rates; and (iv) general business risk. Insurers having less statutory surplus than required by the RBC model formula are subject to varying degrees of regulatory action depending on the level of capital inadequacy. Based on the formula adopted by the NAIC, each of the Company's U.S. insurance company subsidiaries exceeded the RBC capital requirements as at December 31, 2016.

Regulation of Shareholder Dividends and Other Payments from Insurance Subsidiaries

Manulife's ability to meet debt service obligations and pay operating expenses and shareholder dividends depends on the receipt of sufficient funds from its operating subsidiaries. Our U.S. operating subsidiaries are indirectly owned by Manufacturers Life. The payment of dividends by John Hancock USA is subject to restrictions set forth in the insurance laws of Michigan, its domiciliary state. Similarly, the payment of dividends by JHNY and JHLH is regulated by New York and Massachusetts insurance laws, respectively. In all three states, regulatory approval is required if proposed shareholder dividend distributions exceed certain thresholds. In addition, general regulations relating to an insurer's financial condition and solvency may also preclude or restrict the amount of dividends that may be paid by the Company's U.S. insurance subsidiaries.

Federal Securities and Commodity Laws

Certain of the Company's subsidiaries and certain investment funds, policies and contracts offered by them are subject to regulation under federal securities laws administered by the SEC and under certain state securities laws. Certain segregated funds of the Company's insurance subsidiaries are registered as investment companies under the *Investment Company Act of 1940* , as are certain other funds managed by subsidiaries of the Company. Interests in segregated funds under certain variable annuity contracts and variable insurance policies issued by the Company's insurance subsidiaries are also registered under the U.S. *Securities Act of 1933*. Each of John Hancock Distributors LLC, Signator Investors, Inc. and John Hancock Funds, LLC is registered as a broker-dealer under the U.S. Securities Exchange Act of 1934 and each is a member of, and subject to regulation by, the Financial Industry Regulatory Authority.

Each of John Hancock Advisers, LLC, Manulife Asset Management (U.S.) LLC, Hancock Natural Resource Group, Inc., Hancock Venture Partners, Inc., Hancock Capital Investment Management, LLC, Signator Investors, Inc., John Hancock Investment Management Services, LLC, Manulife Asset Management (North America) Limited and John Hancock Personal Financial Services, LLC is an investment adviser registered under the U.S. *Investment Advisers Act of 1940* . Certain investment companies advised or managed by these subsidiaries are registered with the SEC under the *Investment Company Act of 1940* and the shares of certain of these entities are qualified for sale in certain states in the United States and the District of Columbia. All aspects of the investment advisory activities of the Company's subsidiaries are subject to various federal and state laws and regulations in jurisdictions in which they conduct business. These laws and regulations are primarily intended to benefit investment advisory clients and investment company shareholders and generally grant supervisory agencies broad administrative powers, including the power to limit or restrict the carrying on of business for failure to comply with such laws and regulations. In such event, the possible sanctions that may be imposed include the suspension of individual employees, limitations on the activities

in which the investment advisor may engage, suspension or revocation of the investment advisor's registration as an advisor, censure and fines.

The *Commodity Exchange Act* may regulate certain of the Company's segregated funds and registered funds as a "commodity pool", and certain of the Company's registered advisers as a "commodity pool operator" or a "commodity trading advisor".

State Guaranty Funds

All states of the United States have insurance guaranty fund laws requiring life insurance companies doing business in the state to participate in a guaranty association which, like Assuris in Canada, is organized to protect policyholders against loss of benefits in the event of an insolvency or wind-up of a member insurer. These associations levy assessments (up to prescribed limits) on the basis of the proportionate share of premiums written by member insurers in the lines of business in which the impaired or insolvent insurer is engaged. Assessments levied against the Company in each of the past five years have not been material. While the amount of any future assessments by guaranty funds cannot be predicted with certainty, the Company believes, based upon a review of the current significant insolvency proceedings of insurers located in states where the Company conducts business, that future guaranty association assessments for insurer insolvencies will not have a material adverse effect on the Company's liquidity and capital resources.

Employee Retirement Income Security Act of 1974 ("ERISA") Considerations

Fiduciaries of employee benefit plans that are governed by ERISA are subject to regulation by the U.S. Department of Labor. ERISA regulates the activities of a fiduciary of an employee benefit plan covered by that law, including an investment manager or advisor with respect to the plan's assets. Certain of the Company's subsidiaries will be expanding their ability to offer personalized retirement investment advice to ERISA plan participants and Individual Retirement Account owners through the use of digital capabilities. Such service will cause such subsidiaries to be fiduciaries under Department of Labor Regulation Section 2510.3-21 which becomes effective on April 10, 2017.

The Company's subsidiaries also issue insurance and annuity contracts for investment of employee benefit plans and provide a variety of other services to such plans. The provision of such services may cause the Company and its subsidiaries to be a "party in interest," as such term is defined in ERISA and the Internal Revenue Code of 1986, as amended (the "Code"), with respect to such plans. Certain transactions between parties in interest and those plans are prohibited by ERISA and the Code.

Unless a statutory or administrative exemption is available, severe penalties and excise taxes are imposed by ERISA and the Code on fiduciary breaches and prohibited transactions.

ASIA

In Asia, local insurance authorities supervise and monitor the Company's business and financial condition in each of the countries in which the Company operates. The Company is also required to meet specific minimum working and regulatory capital requirements and is subject to regulations governing the investment of such capital in each of these jurisdictions. Hong Kong and Japan are the regulatory jurisdictions governing Manulife's most significant operations in Asia.

Hong Kong

In Hong Kong, the authority and responsibility for supervision of the insurance industry is vested in the Independent Insurance Authority ("IIA") under the newly amended *Insurance Companies Ordinance, Cap. 41* (the "Insurance Companies Ordinance"). The amendments to the Insurance Companies Ordinance partially came into force in December 2015 and the remaining amendments are expected to be implemented in phases through 2017-2018. In the interim, the IIA will co-exist with the Office of the Commissioner of Insurance until the former takes over the regulatory powers of the latter, which is anticipated to occur during the first half of 2017. The Chief Executive of the Government of the Hong Kong Special Administrative Region appoints the members of the IIA for the purposes of the Insurance Companies Ordinance. The Insurance Companies Ordinance provides that no person shall carry on any insurance business in or from Hong Kong except a company authorized to do so by the IIA, Lloyd's of the United Kingdom or an association of underwriters approved by the IIA. The Insurance Companies Ordinance stipulates certain requirements for authorized insurers, including with regard to the enhanced "fit and proper person"

requirements for directors, controllers and several key persons in control functions such as financial control, compliance, risk management, intermediary management, actuary and internal audit, and minimum capital and solvency margin requirements, adequate reinsurance arrangement requirements and statutory reporting requirements. The Insurance Companies Ordinance also confers powers of inspection, investigation and intervention on the IIA for the protection of policyholders and potential policyholders.

The IIA has residual power to appoint an advisor or a manager to any authorized insurer if the IIA considers such appointment to be desirable for the protection of policyholders or potential policyholders against the risk that the insurer may be unable to meet its liabilities or to fulfill the reasonable expectations of policyholders or potential policyholders and that, in the IIA's opinion, the exercise of other interventionary powers conferred by the Insurance Companies Ordinance would not be appropriate to safeguard the interests of policyholders or potential policyholders. In such circumstances, the advisor or manager appointed by the IIA will have management control of the insurer.

In Hong Kong, the Company's life insurance business is conducted through a branch of a wholly owned Bermuda subsidiary, Manulife (International) Limited, which is licensed to carry on the business of "long-term" insurance.

Long-term insurance companies are required under the Insurance Companies Ordinance to maintain certain solvency margins. The required solvency margin is the aggregate of two components: (i) a percentage of the mathematical reserves; and (ii) a percentage of the capital at risk as prescribed under the Insurance Companies (Margin of Solvency) Regulation (Cap.41F), enacted pursuant to the Insurance Companies Ordinance. For a long-term insurance company, the value of its assets must not be less than the amount of its liabilities by the required solvency margin, subject to a minimum of Hong Kong $2 million. Compliance with the solvency margin requirements is reported annually to the IIA. Currently, all solvency margin requirements are being met.

The sale of mutual funds and the issuance of advertisements, invitations or documents in relation to collective investment schemes which contain an invitation to acquire an interest are subject to Hong Kong securities laws administered by the Securities and Futures Commission. The sale of pension fund products is subject to the supervision of the Mandatory Provident Fund Schemes Authority. The sales of investment-linked assurance and group life and health products are subject to the supervision of the IIA.

Japan

Life insurance companies in Japan, including Manulife Life Insurance Company, are governed by the *Insurance Business Law* and the regulations issued thereunder (the "IB Law"). The IB Law sets out a comprehensive regulatory regime for Japanese life insurers, including such matters as capital and solvency requirements, powers of regulatory intervention, new insurance products and restrictions on shareholder dividends and distributions. The administration and application of the IB Law is supervised by the Financial Services Agency ("FSA"). The IB Law provides for certain rules with respect to the approval of new insurance products and the setting of premium levels. Deregulation of sales of insurance products through bank channels became effective on December 23, 2007 and all life insurance products are now able to be sold through the bank channel.

The *Insurance Law*, a comprehensive body of substantive laws covering insurance contracts which replaces the Insurance Chapter of the Commercial Code enacted more than 100 years ago, was fully implemented on April 1, 2010. The *Insurance Law* includes significant changes to the Commercial Code including introduction of provisions on accident and sickness insurance, and enhancement of protection of policyholders, among other things.

Effective March 2012, the FSA introduced new standards for the Solvency Margin Ratio. The Solvency Margin Ratio is a criteria referred to by the authorities in supervising insurance companies when observing their financial strength. The new Solvency Margin Standards put more weight on investment risks. As a result of Manulife Japan's strong risk management policy, as well as prudent investment strategy and reinsurance, the new standards have had little impact on Manulife Japan's Solvency Margin Ratio.

Revisions to the IB Law were approved by the national legislature on May 23, 2014. The revisions incorporate obligations relating to sales of insurance products such as understanding customer's intention and provision of relevant information to customers, as well as agencies' obligation to develop their own controls framework including non-exclusive agencies' obligation to recommend a product based on a comparison with similar products. The revised law came into effect on May 29, 2016.

Investment trust management companies in Japan, including Manulife Asset Management (Japan) Limited, are governed by the *Financial Instruments and Exchange Act* (Japan), *Investment Trust and Investment Corporation Act*

(Japan), and the regulations issued thereunder (the “FIEA” and “ITICA” respectively). The FIEA and ITICA set out a comprehensive regulatory regime for Japanese asset management companies, including investment trust management companies. The administration and application of the FIEA and ITICA are supervised by the FSA. The FIEA and ITICA provide for certain rules with respect to the registration of asset management companies, filing of public offering investment trusts, and other matters.

Restrictions on Shareholder Dividends

In Asia, insurance and company laws in the jurisdictions in which the Company operates provide for specific restrictions on the payment of shareholder dividends and other distributions by the Company’s subsidiaries, or impose solvency or other financial tests, which could affect the ability of these subsidiaries to pay dividends in certain circumstances.

GENERAL DESCRIPTION OF CAPITAL STRUCTURE

MFC has authorized share capital consisting of an unlimited number of common shares (“Common Shares”), an unlimited number of Class A Shares (“Class A Shares”), an unlimited number of Class B Shares (“Class B Shares”) and an unlimited number of Class 1 Shares (“Class 1 Shares”) (collectively, the Class A Shares, Class B Shares and Class 1 Shares are “Preferred Shares”).

As of December 31, 2016, MFC had the following Common Shares, Class A Shares and Class 1 Shares issued:

Common Shares	1,975,454,900
Class A Shares Series 2	14,000,000
Class A Shares Series 3	12,000,000
Class 1 Shares Series 3	6,335,831
Class 1 Shares Series 4	1,664,169
Class 1 Shares Series 5	8,000,000
Class 1 Shares Series 7	10,000,000
Class 1 Shares Series 9	10,000,000
Class 1 Shares Series 11	8,000,000
Class 1 Shares Series 13	8,000,000
Class 1 Shares Series 15	8,000,000
Class 1 Shares Series 17	14,000,000
Class 1 Shares Series 19	10,000,000
Class 1 Shares Series 21	17,000,000
Class 1 Shares Series 23	19,000,000

MFC has authorized but not issued Class 1 Shares Series 6, Class 1 Shares Series 8, Class 1 Shares Series 10, Class 1 Shares Series 12, Class 1 Shares Series 14, Class 1 Shares Series 16, Class 1 Shares Series 18, Class 1 Shares Series 20, Class 1 Shares Series 22 and Class 1 Shares Series 24.

Certain Provisions of the Class A Shares as a Class

The following is a summary of certain provisions attaching to the Class A Shares as a class.

Priority

Each series of Class A Shares ranks on a parity with every other series of Class A Shares and every series of Class 1 Shares with respect to dividends and return of capital. The Class A Shares shall be entitled to a preference over the Class B Shares, the Common Shares and any other shares ranking junior to the Class A Shares with respect to priority in payment of dividends and in the distribution of assets in the event of the liquidation, dissolution or winding-up of MFC, whether voluntary or involuntary, or any other distribution of the assets of MFC among its shareholders for the specific purpose of winding up its affairs.

Certain Provisions of the Class B Shares as a Class

The following is a summary of certain provisions attaching to the Class B Shares as a class.

Priority

Each series of Class B Shares ranks on a parity with every other series of Class B Shares with respect to dividends and return of capital. The Class B Shares shall rank junior to the Class A Shares and the Class 1 Shares with respect to priority in payment of dividends and in the distribution of assets in the event of the liquidation, dissolution or winding up of MFC, whether voluntary or involuntary, or any other distribution of the assets of MFC among its shareholders for the specific purpose of winding up its affairs, but the Class B Shares shall be entitled to a preference over the Common Shares and any other shares ranking junior to the Class B Shares with respect to priority in payment of dividends and the distribution of assets in the event of the liquidation, dissolution or winding up of MFC, whether voluntary or involuntary, or any other distribution of the assets of MFC among its shareholders for the specific purpose of winding up its affairs.

Certain Provisions of the Class 1 Shares as a Class

The following is a summary of certain provisions attaching to the Class 1 Shares as a class.

Priority

Each series of Class 1 Shares ranks on a parity with every other series of Class 1 Shares and every series of Class A Shares with respect to dividends and return of capital. The Class 1 Shares shall be entitled to a preference over the Class B Shares, the Common Shares and any other shares ranking junior to the Class 1 Shares with respect to priority in payment of dividends and in the distribution of assets in the event of the liquidation, dissolution or winding-up of MFC, whether voluntary or involuntary, or any other distribution of the assets of MFC among its shareholders for the specific purpose of winding up its affairs.

Certain Provisions Common to the Class A Shares, Class B Shares and Class 1 Shares

The following is a summary of certain provisions attaching to the Class A Shares as a class, to the Class B Shares as a class and to the Class 1 Shares as a class.

Directors' Right to Issue in One or More Series

The Class A Shares, Class B Shares and Class 1 Shares may be issued at any time and from time to time in one or more series. Before any shares of a series are issued, the Board of Directors of MFC shall fix the number of shares that will form such series, if any, and shall, subject to any limitations set out in the by-laws of MFC or in the ICA, determine the designation, rights, privileges, restrictions and conditions to be attached to the Class A Shares, Class B Shares or Class 1 Shares as the case may be, of such series, the whole subject to the filing with the Superintendent of the particulars of such series, including the rights, privileges, restrictions and conditions determined by the Board of Directors of MFC.

Summaries of the terms for each series of the Class A Shares and Class 1 Shares that have been issued or authorized for issuance are contained in the prospectuses relating to such shares, which are available on SEDAR.

Voting Rights of Preferred Shares

Except as hereinafter referred to or as required by law or as specified in the rights, privileges, restrictions and conditions attached from time to time to any series of Class A Shares, Class B Shares or Class 1 Shares, the holders of such Class A Shares, Class B Shares or Class 1 Shares as a class shall not be entitled as such to receive notice of, to attend or to vote at any meeting of the shareholders of MFC.

Amendment with Approval of Holders of Preferred Shares

The rights, privileges, restrictions and conditions attached to each of the Class A Shares, Class B Shares and Class 1 Shares as a class may be added to, changed or removed but only with the approval of the holders of such class of Preferred Shares given as hereinafter specified.

Approval of Holders of Preferred Shares

The approval of the holders of a class of Preferred Shares to add to, change or remove any right, privilege, restriction or condition attaching to such class of Preferred Shares as a class or in respect of any other matter requiring the consent of the holders of such class of Preferred Shares may be given in such manner as may then be required by law,

subject to a minimum requirement that such approval be given by resolution signed by all the holders of such class of Preferred Shares or passed by the affirmative vote of at least two-thirds (2/3) of the votes cast at a meeting of the holders of such class of Preferred Shares duly called for that purpose. Notwithstanding any other condition or provision of any class of Preferred Shares, the approval of the holders of any class, voting separately as a class or series, is not required on a proposal to amend the by-laws of MFC to:

(i) increase or decrease the maximum number of authorized Class A Shares, Class B Shares or Class 1 Shares, as the case may be, or increase the maximum number of authorized shares of a class of shares having rights or privileges equal or superior to such class of Preferred Shares;

(ii) effect the exchange, reclassification or cancellation of all or any part of the Class A Shares, Class B Shares or Class 1 Shares, as the case may be; or

(iii) create a new class of shares equal to or superior to the Class A Shares, the Class B Shares or the Class 1 Shares, as the case may be.

The formalities to be observed with respect to the giving of notice of any such meeting or any adjourned meeting, the quorum required therefor and the conduct thereof shall be those from time to time required by the ICA as in force at the time of the meeting and those, if any, prescribed by the by-laws or the administrative resolutions of MFC with respect to meetings of shareholders. On every poll taken at every meeting of the holders of a class of Preferred Shares as a class, or at any joint meeting of the holders of two or more series of a class of Preferred Shares, each holder of such class of Preferred Shares entitled to vote thereat shall have one vote in respect of each relevant Preferred Share held.

Certain Provisions of the Common Shares as a Class

The authorized common share capital of MFC consists of an unlimited number of Common Shares without nominal or par value. Each holder of Common Shares is entitled to receive notice of and to attend all meetings of the shareholders of MFC and is entitled to one vote for each share held except for meetings at which only holders of another specified class or series of shares of MFC are entitled to vote separately as a class or series. The holders of Common Shares are entitled to receive dividends as and when declared by the Board of Directors of MFC, subject to the preference of the holders of Class A Shares, Class B Shares, Class 1 Shares and any other shares ranking senior to the Common Shares with respect to priority in payment of dividends. After payment to the holders of Class A Shares, Class B Shares, Class 1 Shares and any other shares ranking senior to Common Shares with respect to priority in the distribution of assets in the event of the liquidation, dissolution or winding-up of MFC, the holders of Common Shares shall be entitled to receive prorated the net assets of MFC remaining, after the payment of all creditors and liquidation preferences, if any, that pertains to shareholders.

DIVIDENDS

The declaration and payment of dividends and the amount thereof is subject to the discretion of the Board of Directors and is dependent upon the results of operations, financial condition, cash requirements and future prospects of, and regulatory restrictions on the payment of dividends by, the Company and other factors deemed relevant by the Board of Directors.

Since MFC is a holding company that conducts all of its operations through regulated insurance subsidiaries (or companies owned directly or indirectly by these subsidiaries), its ability to pay future dividends will depend on the receipt of sufficient funds from its regulated insurance subsidiaries. These subsidiaries are also subject to certain regulatory restrictions under laws in Canada, the United States and certain other countries that may limit their ability to pay dividends or make other upstream distributions.

Pursuant to an agreement made between MFC, Manufacturers Life, CIBC Mellon Trust Company (“CIBC Mellon”) and Manulife Financial Capital Trust II (a subsidiary of Manufacturers Life) (the “Trust II”), MFC and Manufacturers Life have covenanted for the benefit of holders of the outstanding Manulife Financial Capital Trust II Notes – Series I (the “Notes”) that, if interest is not paid in full in cash on the Notes on any interest payment date or if Manufacturers Life elects that holders of Notes invest interest payable on the Notes on any interest payment date in a new series of Manufacturers Life Class 1 Shares, Manufacturers Life will not declare or pay cash dividends on any MLI Public Preferred Shares (as defined below), if any are outstanding, and if no MLI Public Preferred Shares are outstanding, MFC will not declare or pay cash dividends on its Preferred Shares and Common Shares, in each case,

until the sixth month following such deferral date. “MLI Public Preferred Shares” means, at any time, preferred shares of Manufacturers Life which at that time: (a) have been issued to the public (excluding any preferred shares of Manufacturers Life held beneficially by affiliates of Manufacturers Life); (b) are listed on a recognized stock exchange; and (c) have an aggregate liquidation entitlement of at least $200 million, provided however, if at any time, there is more than one class of MLI Public Preferred Shares outstanding, then the most senior class or classes of outstanding MLI Public Preferred Shares shall, for all purposes, be the MLI Public Preferred Shares.

MFC has paid the following cash dividends in the period from January 1, 2014 to December 31, 2016:

Type of Shares	2016	2015	2014
Common Shares[7]	$ 0.74	$ 0.665	$ 0.57
Preferred Shares			
Class A Shares Series 1[8]	—	$0.5125	$1.02500
Class A Shares Series 2	$1.1625	$1.1625	$1.16252
Class A Shares Series 3	$1.1250	$1.1250	$ 1.1250
Class A Shares Series 4[9]	—	—	$ 0.8250
Class 1 Shares Series 1[10]	—	—	$ 1.0500
Class 1 Shares Series 3	$0.7973	$1.0500	$ 1.0500
Class 1 Shares Series 4[11]	$0.2431	—	—
Class 1 Shares Series 5	$1.1000	$1.1000	$ 1.1000
Class 1 Shares Series 7	$1.1500	$1.1500	$ 1.1500
Class 1 Shares Series 9	$1.1000	$1.1000	$ 1.1000
Class 1 Shares Series 11	$1.0000	$1.0000	$ 1.0000
Class 1 Shares Series 13	$0.9500	$0.9500	$ 0.9500
Class 1 Shares Series 15	$0.9750	$0.9750	$0.79202
Class 1 Shares Series 17	$0.9750	$0.9750	$0.33658
Class 1 Shares Series 19	$0.9500	$0.9884	—
Class 1 Shares Series 21	$1.1411	—	—

The 2016, 2015 and 2014 dividends on the Common Shares, the Class A Shares and the Class 1 Shares were paid quarterly in March, June, September and December.

CONSTRAINTS ON OWNERSHIP OF SHARES

The ICA contains restrictions on the purchase or other acquisition, issue, transfer and voting of the shares of MFC. Pursuant to these restrictions, no person is permitted to acquire any shares of MFC if the acquisition would cause the person to have a “significant interest” in any class of shares of MFC, unless the prior approval of the Minister of Finance is obtained. The restrictions also prohibit any person from becoming a “major shareholder” of MFC. In addition, MFC is not permitted to record in its securities register any transfer or issue of shares if the transfer or issue would cause the person to breach the ownership restrictions. For these purposes, a person has a significant interest in a class of shares of MFC where the aggregate of any shares of that class beneficially owned by that person, any entity controlled by that person and by any person associated or acting jointly or in concert with that person exceeds 10% of all the outstanding shares of that class of shares of MFC. A person is a major shareholder if the aggregate of any shares in a class of voting shares held by that person and by any entity controlled by that person exceeds 20% of the outstanding shares of that class, or, for a class of non-voting shares, a holding exceeds 30% of that class. If a person contravenes any of these restrictions, the Minister of Finance may, by order, direct such person to dispose of all or any portion of those shares. In addition, the ICA prohibits life insurance companies, including MFC, from recording in its securities register a transfer or issue of any share to Her Majesty in right of Canada or of a province, an agent or agency of Her Majesty, a foreign government or an agent or agency of a foreign government and provides further that

7 The Board approved an increase of the quarterly dividend amount on the Common Shares from $0.13 per share to $0.155 per share on August 6, 2014, from $0.155 per share to $0.17 per share on May 6, 2015, and from $0.17 per share to $0.185 per share on February 10, 2016.

8 On June 19, 2015, MFC redeemed all of its 14,000,000 outstanding Class A Shares Series 1.

9 On June 19, 2014, MFC redeemed all of its 18,000,000 outstanding Class A Shares Series 4.

10 On September 19, 2014, MFC redeemed all of its 14,000,000 outstanding Class 1 Shares Series 1.

11 On June 20, 2016, MFC converted 1,664,169 Class 1 Shares Series 3 into Class 1 Shares Series 4.

no person may exercise the voting rights attached to those shares of an insurance company. The ICA exempts from such constraints certain foreign financial institutions which are controlled by foreign governments and eligible agents provided certain conditions are satisfied.

Under applicable insurance laws and regulations in Michigan, New York, Massachusetts and Vermont, no person may acquire control of any of the Company's insurance company subsidiaries domiciled in any such state without obtaining prior approval of such state's insurance regulatory authority. Under applicable laws and regulations, any person acquiring, directly or indirectly, 10% or more of the voting securities of any other person is presumed to have acquired "control" of such person. Thus, any person seeking to acquire 10% or more of the voting securities of MFC must obtain the prior approval of the insurance regulatory authorities in certain states including Michigan, Massachusetts, Vermont and New York, or must demonstrate to the relevant insurance commissioner's satisfaction that the acquisition of such securities will not give them control of MFC. Under U.S. law, the failure to obtain such prior approval would entitle MFC or the insurance regulatory authorities to seek injunctive relief, including enjoining any proposed acquisition, the voting of such securities at any meeting of the holders of Common Shares, or seizing shares owned by such person, and such shares may not be entitled to be voted at any meeting of the holders of Common Shares.

RATINGS

Credit rating agencies publish financial strength ratings on life insurance companies that are indicators of an insurance company's ability to meet contract holder and policyholder obligations. Credit rating agencies also assign credit ratings, which are indicators of an issuer's ability to meet the terms of its obligations in a timely manner, and are important factors in a company's overall funding profile and ability to access external capital.

Ratings are important factors in establishing the competitive position of insurance companies, maintaining public confidence in products being offered, and determining the cost of capital. A ratings downgrade, or the potential for such a downgrade could, among other things: increase our cost of capital and limit our access to the capital markets; cause some of our existing liabilities to be subject to acceleration, additional collateral support, changes in terms, or additional financial obligations; result in the termination of our relationships with broker-dealers, banks, agents, wholesalers and other distributors of our products and services; unfavourably impact our ability to execute on our hedging strategy; materially increase the number of surrenders, for all or a portion of the net cash values, by the owners of policies, contracts and general account GICs we have issued, and materially increase the number of withdrawals by policyholders of cash values from their policies; and reduce new sales, particularly with respect to general account GICs purchased by pension plans and other institutions. Any of these consequences could adversely affect our results of operations and financial condition.

The following table summarizes the security ratings, outlook and ranking that MFC has received from approved rating organizations on its outstanding securities as at the date of this AIF.

	DBRS Limited ("DBRS")		**Fitch Ratings Inc. ("Fitch")**		**S&P Global Ratings ("S&P")**	
Securities	Rating/Outlook	Rank	Rating/Outlook	Rank	Rating/Outlook	Rank
Preferred Shares Class A Series 2, 3 Class 1 Series 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23	Pfd-2/ Stable	5 of 16	BBB- / Stable	10 of 19	P-2 (High) / BBB+ / Stable	4 of 18 6 of 20
Preferred Shares Class 1 Series 4[1]	Pfd-2/ Stable	5 of 16	BBB- / Stable	10 of 19	n/a	n/a
Medium Term Notes and Senior Debt	A/ Stable	6 of 26	A- / Stable	7 of 19	A / Stable	6 of 22
Subordinated Debt	n/a	n/a	BBB+ / Stable	8 of 19	A- / Stable	7 of 22

1 A portion of holders of Preferred Shares Class 1 Shares Series 3 elected to convert their holdings into Preferred Shares Class 1 Shares Series 4, on June 20, 2016.

The security ratings accorded by the rating organizations are not a recommendation to purchase, hold or sell these securities and may be subject to revision or withdrawal at any time by the rating organizations. Security ratings are intended to provide investors with an independent measure of the credit quality of an issue of securities. The Company provides certain rating agencies with confidential, in-depth information in support of the rating process. The issuance of additional debt, hybrid securities, or preferred shares could put pressure on these ratings. If, in the

view of the rating organizations, there is deterioration in capital flexibility, operating performance, or the risk profile of the Company, this could also put pressure on these ratings.

The Company has paid customary rating fees to DBRS, Fitch and S&P in connection with some or all of the above-mentioned ratings. In addition, the Company has made customary payments in respect of certain other services provided to the Company by each of DBRS, Fitch and S&P during the last two years.

DBRS Ratings

DBRS assigns ratings for preferred shares in a range from "Pfd-1" to "D". The DBRS preferred share rating scale is used in the Canadian securities market and is meant to give an indication of the risk that a borrower will not fulfill its full obligations in a timely manner, with respect to both dividend and principal commitments. DBRS assigns ratings for long-term obligations in a range from "AAA" to "D". The scale provides an opinion on the risk that an issuer will fail to satisfy its financial obligations in accordance with the terms under which an obligation has been issued. Every DBRS rating is based on quantitative and qualitative considerations relevant to the borrowing entity. Some rating categories are denoted by the subcategories "high" and "low". The absence of either a "high" or "low" designation indicates the rating is in the middle of the category. Each DBRS rating is appended with one of three rating trends – "Positive", "Stable", or "Negative". The rating trend indicates the direction in which DBRS considers the rating may move if present circumstances continue, or in some cases, unless challenges are addressed; a positive or negative trend does not necessarily indicate that a rating change is imminent. The Company's current ratings trend is stable.

MFC's outstanding Class A Shares and Class 1 Shares have been assigned a "Pfd-2" rating as they are considered to be of satisfactory credit quality. Protection of dividends and principal is still substantial, but earnings, the balance sheet and coverage ratios are not as strong as "Pfd-1" rated companies.

MFC's Medium Term Notes and Senior Debt have been assigned an "A" rating reflecting good credit quality. The capacity for the payment of financial obligations is substantial, but of lesser credit quality than "AA". The Company may be vulnerable to future events, but qualifying negative factors are considered manageable.

Fitch Ratings

Fitch assigns ratings for preferred shares and debt in a range from "AAA" to "C" and these ratings provide an opinion on the relative ability of an entity to meet financial commitments, such as interest, preferred dividends, repayment of principal, insurance claims or counterparty obligations. These ratings are used by investors as indications of the likelihood of receiving the money owed to them in accordance with the terms on which they invested. These ratings do not directly address any risk other than credit risk. In particular, ratings do not deal with the risk of a market value loss on a rated security due to changes in interest rates, liquidity and other market considerations. The modifiers "+" or "**-**" may be appended to a rating to denote relative status within major rating categories. Rating outlooks indicate the direction a rating is likely to move over a one- to two-year period. Rating outlooks may be positive, stable, negative or evolving. The Company's current rating outlook is stable.

MFC's outstanding Class A Shares and Class 1 Shares have been assigned a "BBB-" rating. The Company's capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity.

MFC's Medium Term Notes and Senior Debt have been assigned an "A-" rating. This rating denotes expectations of low credit risk. The capacity for payment of financial commitments is considered strong. This capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings.

MFC's Subordinated Debt have been assigned a "BBB+" rating. This rating indicates that expectations of default risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity.

S&P's Ratings

S&P assigns ratings for Canadian preferred shares in a range from "P-1" to "D" and these ratings are a forward-looking opinion about the creditworthiness of an obligor with respect to a specific preferred share obligation issued in the Canadian market, relative to preferred shares issued by other issuers in the Canadian market. There is a direct correspondence between the specific ratings assigned on the Canadian preferred share scale and the various rating levels on the global debt rating scale of S&P. It is the practice of S&P to present an issuer's preferred share ratings on

both the global ratings scale and the Canadian national scale when listing the ratings for a particular issuer. S&P's Canadian scale preferred share ratings may be modified by the addition of "High" or "Low" to show relative standing within the major rating categories. S&P's global scale preferred share ratings may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories. Rating outlooks assess the potential direction of a long-term credit rating over the intermediate term (typically six months to two years). Rating outlooks may be positive, negative, stable, developing or not meaningful. The Company's current rating outlook is stable.

S&P assigns ratings for long-term obligations in a range from "AAA" to "D". These ratings provide a forward-looking opinion about the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program (including ratings on medium-term note programs and commercial paper programs). S&P's long-term issue credit ratings may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories. Rating outlooks may be positive, negative, stable, developing or not meaningful. The Company's current rating outlook is stable.

MFC's outstanding Class A Shares and Class 1 Shares, with the exception of Class 1 Series 4 which are unrated, have been assigned a "P-2 (High)" rating on the Canadian scale, which corresponds to a "BBB+" rating on the global scale. The "P-2 (High)" rating denotes that the specific obligation exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.

MFC's Medium Term Notes and Senior Debt have been assigned an "A" rating, while its Subordinated Debt has been assigned an "A-" rating. An obligation rated "A" or "A-" is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.

MARKET FOR SECURITIES

MFC's Common Shares are listed for trading under the symbol "MFC" on the Toronto Stock Exchange ("TSX"), the New York Stock Exchange ("NYSE"), and the Philippine Stock Exchange and under "0945" on The Stock Exchange of Hong Kong. The Class A Shares Series 2 and Class A Shares Series 3 preferred shares are listed for trading on the TSX under the symbol "MFC.PR.B" and "MFC.PR.C", respectively. The Class 1 Shares Series 3, Class 1 Shares Series 4, Class 1 Shares Series 5, Class 1 Shares Series 7, Class 1 Shares Series 9, Class 1 Shares Series 11, Class 1 Shares Series 13, Class 1 Shares Series 15, Class 1 Shares Series 17, Class 1 Shares Series 19, Class 1 Shares Series 21 and Class 1 Shares Series 23 preferred shares are listed for trading on the TSX under the symbol "MFC.PR.F", "MFC.PR.P", "MFC.PR.G", "MFC.PR.H", "MFC.PR.I", "MFC.PR.J", "MFC.PR.K", "MFC.PR.L", "MFC.PR.M", "MFC.PR.N", "MFC.PR.O", and "MFC.PR.R", respectively.

Trading Price and Volume

The following table sets out the intra-day price range and trading volume of the Common Shares on the TSX and the NYSE for the period indicated.

	TSX			NYSE		
2016	High (C$)	Low (C$)	Volume (000s)	High (U.S.$)	Low (U.S.$)	Volume (000s)
January	20.53	17.13	90,535	14.73	11.74	18,996
February	19.32	15.32	118,168	13.88	10.99	25,208
March	19.07	18.05	83,658	14.54	13.47	21,266
April	19.24	16.98	74,562	15.22	12.91	18,280
May	19.68	17.65	76,771	15.13	13.82	17,638
June	19.42	16.43	123,774	15.11	12.55	18,443
July	18.28	16.53	71,020	13.86	12.69	12,071
August	18.36	16.87	82,995	13.98	12.92	15,520
September	18.84	17.62	80,901	14.49	13.39	17,126
October	19.75	18.35	75,220	14.91	13.97	15,283
November	23.85	18.96	134,576	17.70	14.15	21,996
December	25.42	22.95	98,621	19.04	17.29	15,721

The following tables set out the intra-day price range and trading volume of the Class A Shares Series 2 and Series 3 preferred shares and the Class 1 Shares Series 3, Series 4, Series 5, Series 7, Series 9, Series 11, Series 13, Series 15, Series 17, Series 19, Series 21 and Series 23 preferred shares on the TSX for the period indicated. During the year, MFC completed two preferred share offerings, issuing 17 million Class 1 Shares Series 21 and 19 million Class 1 Shares Series 23. The Company also converted 1,664,169 Class 1 Shares Series 3 into Class 1 Shares Series 4.

	TSX – Class A Shares Series 2			TSX – Class A Shares Series 3		
2016	High (C$)	Low (C$)	Volume (000s)	High (C$)	Low (C$)	Volume (000s)
January	21.44	19.21	314	21.05	18.78	174
February	21.45	19.91	266	21.38	19.55	322
March	21.77	20.27	211	20.98	19.88	226
April	22.20	21.33	78	21.49	20.56	83
May	22.80	21.87	128	21.91	21.03	151
June	22.73	21.93	119	21.79	21.10	140
July	23.92	22.60	131	22.84	21.70	134
August	24.35	23.20	238	23.35	22.50	152
September	23.73	23.18	111	22.79	22.10	141
October	23.76	23.19	177	22.80	21.90	140
November	23.60	21.58	191	22.65	21.00	188
December	22.45	21.57	147	22.17	20.83	181

	TSX – Class 1 Shares Series 3			TSX – Class 1 Shares Series 4		
2016	High (C$)	Low (C$)	Volume (000s)	High (C$)	Low (C$)	Volume (000s)
January	15.10	11.19	364	—	—	—
February	12.86	11.34	186	—	—	—
March	13.50	12.02	243	—	—	—
April	14.29	12.76	262	—	—	—
May	14.25	13.48	223	—	—	—
June	14.05	12.60	403	12.90	12.49	8
July	14.81	13.49	145	12.82	11.30	63
August	15.06	14.00	111	13.80	12.50	49
September	14.01	13.15	159	14.76	12.68	53
October	14.12	13.41	111	13.18	12.50	17
November	14.01	12.37	179	14.37	12.76	28
December	14.63	13.50	287	14.16	13.13	39

	TSX – Class 1 Shares Series 5			TSX – Class 1 Shares Series 7		
2016	High (C$)	Low (C$)	Volume (000s)	High (C$)	Low (C$)	Volume (000s)
January	22.42	16.38	249	23.80	17.80	184
February	18.81	16.10	291	20.05	17.99	245
March	18.85	16.42	352	20.65	18.50	172
April	20.15	18.43	121	22.01	20.25	150
May	20.23	19.46	164	22.06	21.02	202
June	20.43	17.86	200	22.40	20.30	159
July	19.79	18.35	117	22.38	20.71	71
August	20.82	19.68	210	23.11	21.60	130
September	20.01	18.79	216	21.64	20.76	178
October	20.94	19.66	262	22.44	21.16	216
November	21.76	20.24	241	23.32	21.55	242
December	22.28	20.24	287	24.06	21.47	360

2016	TSX – Class 1 Shares Series 9			TSX – Class 1 Shares Series 11		
	High (C$)	Low (C$)	Volume (000s)	High (C$)	Low (C$)	Volume (000s)
January	23.02	16.51	377	21.83	16.34	159
February	19.24	16.20	343	18.24	15.39	227
March	19.34	16.61	275	18.42	16.00	191
April	20.78	18.84	154	20.14	18.22	73
May	21.06	20.41	120	20.22	19.46	180
June	21.50	18.95	270	20.78	18.02	142
July	20.99	19.15	199	20.35	18.11	396
August	22.16	20.32	216	20.77	19.30	221
September	20.46	17.70	159	19.39	17.72	249
October	21.13	19.65	253	20.22	19.00	134
November	21.73	20.11	289	21.28	17.21	370
December	22.54	20.01	463	21.64	19.45	292

2016	TSX – Class 1 Shares Series 13			TSX – Class 1 Shares Series 15		
	High (C$)	Low (C$)	Volume (000s)	High (C$)	Low (C$)	Volume (000s)
January	20.60	15.21	235	20.53	15.60	356
February	16.69	14.19	102	17.31	14.50	121
March	17.33	14.40	137	17.95	14.52	183
April	18.90	16.86	147	19.54	17.54	123
May	18.85	18.08	95	19.43	18.53	73
June	18.97	16.28	112	19.51	16.65	171
July	18.16	16.34	106	18.71	17.08	81
August	19.07	17.55	193	19.84	18.35	147
September	17.60	16.56	230	18.44	17.72	74
October	18.22	17.10	171	19.03	17.57	141
November	18.84	17.31	265	19.24	16.65	205
December	19.53	17.66	372	19.76	17.89	269

2016	TSX – Class 1 Shares Series 17			TSX – Class 1 Shares Series 19		
	High (C$)	Low (C$)	Volume (000s)	High (C$)	Low (C$)	Volume (000s)
January	21.08	16.21	305	20.73	15.61	121
February	18.50	15.68	189	18.40	15.80	102
March	18.94	16.00	304	18.65	16.02	142
April	20.81	18.77	256	20.41	18.53	187
May	20.20	19.17	264	20.06	19.14	85
June	20.34	17.83	230	20.14	17.71	121
July	19.22	17.85	156	20.01	17.75	77
August	21.06	18.84	213	20.00	18.70	107
September	19.01	17.02	203	19.13	17.61	114
October	19.49	18.23	391	19.41	18.30	171
November	20.40	17.92	331	20.28	18.25	212
December	20.62	18.56	555	20.20	18.48	377

2016	TSX – Class 1 Shares Series 21 High (C$)	Low (C$)	Volume (000s)	TSX – Class 1 Shares Series 23 High (C$)	Low (C$)	Volume (000s)
January	—	—	—	—	—	—
February	25.02	24.80	1,126	—	—	—
March	26.50	25.00	1,023	—	—	—
April	26.42	25.75	582	—	—	—
May	26.38	25.93	552	—	—	—
June	26.55	25.91	392	—	—	—
July	26.87	26.28	499	—	—	—
August	27.25	26.26	509	—	—	—
September	27.19	26.25	159	—	—	—
October	27.19	26.41	316	—	—	—
November	27.16	25.85	498	25.01	24.68	2,030
December	27.19	26.21	261	25.20	24.83	2,360

LEGAL PROCEEDINGS

A description of certain legal and regulatory proceedings to which the Company is a party can be found in the section entitled “Legal and Regulatory Proceedings” in MFC’s Management’s Discussion and Analysis for the year ended December 31, 2016.

DIRECTORS AND EXECUTIVE OFFICERS

DIRECTORS

The by-laws of MFC provide that the Board of Directors shall consist of a minimum of seven and a maximum of 30 Directors, with the exact number of Directors to be elected at any annual meeting of MFC to be fixed by the Directors prior to such annual meeting.

The following table sets forth the Directors of MFC, as of the date of this AIF, and for each Director, their province or state and country of residence, principal occupation, years as a director and membership on board committees.

Each Director is elected for a term of one year, expiring at the close of the next annual meeting of the Company. The next annual meeting will occur on May 4, 2017.

Name and Residence	Principal Occupation	Director Since	Board Committee Membership[1]
Richard B. DeWolfe, Massachusetts, United States	Chairman of the Board, MFC and Manufacturers Life [2] Managing Partner, DeWolfe & Company LLC (consulting firm) [3]	April 2004	CGNC [4]
Donald A. Guloien Ontario, Canada	President and Chief Executive Officer, MFC and Manufacturers Life	May 2009	N/A [5]
Joseph P. Caron British Columbia, Canada	President, Joseph Caron Incorporated (consulting firm) [6]	October 2010	CGNC (Chair) MRCC
John M. Cassaday Ontario, Canada	Corporate Director[7]	April 1993	CGNC MRCC (Chair)
Susan F. Dabarno Ontario, Canada	Corporate Director	March 2013	Audit MRCC

Sheila S. Fraser Ontario, Canada	Corporate Director	November 2011	Audit (Chair) Risk
Luther S. Helms Arizona, United States	Managing Partner, Sonata Capital Group (investment advisory firm)	May 2007	Audit CGNC
Tsun-yan Hsieh Singapore	Chairman, LinHart Group Pte Ltd. (consulting firm)	October 2011	MRCC
P. Thomas Jenkins Ontario, Canada	Chairman, OpenText Corporation (enterprise information management company)(8)	March 2015	Audit Risk
Pamela O. Kimmet Georgia, United States	Chief Human Resources Officer, Cardinal Health, Inc. (health care services company)(9)	March 2016	MRCC Risk
Donald R. Lindsay British Columbia, Canada	President and Chief Executive Officer, Teck Resources Limited (diversified resources company)	August 2010	Risk
John R.V. Palmer Ontario, Canada	Corporate Director	November 2009	Audit Risk
C. James Prieur Illinois, United States	Corporate Director	January 2013	MRCC Risk (Chair)
Andrea S. Rosen Ontario, Canada	Corporate Director	August 2011	Audit CGNC
Lesley D. Webster Florida, United States	President, Daniels Webster Capital Advisors (enterprise risk management consulting firm)	October 2012	MRCC Risk

Notes:

(1) In this table, Audit means Audit Committee, CGNC means Corporate Governance and Nominating Committee, MRCC means Management Resources and Compensation Committee, and Risk means Risk Committee.

(2) Richard DeWolfe was appointed Chairman of the Board on May 2, 2013. Prior to May 2013, Mr. DeWolfe was Vice-Chair of the Board, a position he had held since December 1, 2012.

(3) Mr. DeWolfe served as an independent director of Avantair, Inc. (Avantair) between 2009 and August 2013. On July 25, 2013, an involuntary petition under chapter 7 of title 11 of the United States Code (Bankruptcy Code) was filed in the United States Bankruptcy Court for the Middle District of Florida, Tampa Division (the Bankruptcy Court) against Avantair (Case No. 13-09719). On August 16, 2013, the Bankruptcy Court entered an order for relief under chapter 7 of the Bankruptcy Code. Sales of certain assets have been authorized and proceeds from the sales have been distributed. The chapter 7 trustee has asserted claims against the former officers, directors and certain employees of Avantair, including Mr. DeWolfe (the Avantair Parties). The trustee has not commenced litigation against any of the independent directors. In April 2015, the Avantair Parties participated in a court-ordered pre-suit mediation with the chapter 7 trustee along with various plaintiffs who had asserted claims against various Avantair Parties in multiple jurisdictions. The majority of these claims do not involve the independent directors of Avantair. The chapter 7 trustee reached an agreement with the Avantair Parties to resolve the trustee's threatened claims in exchange for a settlement payment of US$8 million and relinquishment of certain competing claims in the bankruptcy. The independent directors are not funding any portion of the $8 million payment. An evidentiary hearing for approval of the settlement by the Bankruptcy Court was conducted from January 22 through January 27, 2016. On November 18, 2016, the Bankruptcy Court approved the settlement, thereby ending the bankruptcy proceeding. Mr. DeWolfe continues to deny the allegations previously asserted by the chapter 7 trustee and in related lawsuits.

(4) Mr. DeWolfe is a member of the CGNC. However, in his capacity as Chairman, Mr. DeWolfe attends the meetings of all committees whenever possible.

(5) Donald Guloien is not a member of any committee but attends committee meetings at the invitation of the Chairman. One Board meeting in 2016 was for independent directors only.

(6) From 2010 to 2013 Joseph Caron was a member of HB Global Advisors Corporation, the international consulting firm of Heenan Blaikie LLP.

(7) Prior to March 2015, John Cassaday was President and Chief Executive Officer, Corus Entertainment Inc., a broadcasting company.

(8) Prior to 2013, Thomas Jenkins was Chief Strategy Officer of OpenText Corporation.

(9) Prior to July 2016, Pamela Kimmet was Senior Vice President, Human Resources, Coca-Cola Enterprises Inc., a publicly traded beverage marketer, producer, and distributor.

EXECUTIVE OFFICERS

The name, province or state and country of residence, and position of each of the executive officers of Manulife are set forth in the following table as of December 31, 2016.

Name and Residence	Position with Manulife
Donald A. Guloien Ontario, Canada	President and Chief Executive Officer
Craig R. Bromley Massachusetts, United States	Senior Executive Vice President, U.S. Division(1)
Steven A. Finch Massachusetts, United States	Executive Vice President and Chief Actuary(2)
Gregory A. Framke New Jersey, United States	Executive Vice President, Chief Information Officer(3)
James D. Gallagher Massachusetts, United States	Executive Vice President and General Counsel(4)
Gretchen H. Garrigues Massachusetts, United States	Executive Vice President, Global Chief Marketing Officer(5)
Rocco (Roy) Gori Hong Kong, Special Administrative Region of the People's Republic of China	Senior Executive Vice President and General Manager, Asia(6)
Marianne Harrison Ontario, Canada	Senior Executive Vice President and General Manager, Canada(7)
Scott S. Hartz Massachusetts, United States	Executive Vice President, General Account Investments
Rahim Hirji Ontario, Canada	Executive Vice President and Chief Risk Officer
Stephani E. Kingsmill Ontario, Canada	Executive Vice President, Human Resources
Linda P. Mantia Ontario, Canada	Senior Executive Vice President and Chief Operating Officer(8)
Timothy W. Ramza Massachusetts, United States	Executive Vice President and Chief Innovation Officer(9)
Stephen B. Roder Ontario, Canada	Senior Executive Vice President and Chief Financial Officer(10)
Kai R. Sotorp Ontario, Canada	Executive Vice President, Global Business Head, Wealth and Asset Management(11)
Warren A. Thomson Ontario, Canada	Senior Executive Vice President and Chief Investment Officer

Notes

(1) Prior to September 2012, Craig Bromley was Executive Vice President and General Manager, Japan.
(2) Prior to April 2016, Steven Finch was Executive Vice President and Chief Financial Officer – U.S. Division, John Hancock Financial Services.
(3) Prior to January 2016, Gregory Framke was the Executive Vice President and Chief Operations Officer at E*Trade Financial Corp. including roles as Chief Operations Officer, Vice President Technology Strategy and Chief Information Officer.
(4) Prior to December 2016, James Gallagher was Executive Vice President and Interim General Counsel. Prior to October 2016, Mr. Gallagher was Executive Vice President, General Counsel and Chief Administrative Officer, U.S. Division. Prior to August 2012, Mr. Gallagher was Executive Vice President, Global Compliance.
(5) Prior to August 2016, Gretchen Garrigues was Senior Vice President and Chief Marketing Officer, First Data Corp. Prior to June 2014, Ms. Garrigues was Senior Managing Director, Global Strategic Marketing, GE Capital.
(6) Prior to March 2015, Roy Gori was Regional Head of Retail Banking, Asia Pacific/Head of Consumer Banking North Asia and Australia with Citigroup Pty Ltd.
(7) Prior to January 2013, Marianne Harrison was Executive Vice President and General Manager of John Hancock Long-Term Care Insurance.
(8) Prior to October 2016, Linda Mantia was Executive Vice President of Digital, Payments and Cards, Royal Bank of Canada.

(9) Prior to November 2015, Timothy Ramza was Senior Vice President, Wealth Management Strategy and Business Development.
(10) Prior to June 2012, Stephen Roder was a co-founder and director of Peak Reinsurance Company Ltd.
(11) Prior to July 1, 2014, Kai Sotorp was Head, Asia Pacific, Group Managing Director at UBS Global Asset Management (Hong Kong). Prior to September 2012, Mr. Sotorp was Senior Advisor at Florida Equity Partners.

SHARE OWNERSHIP

The number of Common Shares held by Directors and executive officers of MFC as at December 31, 2016 was 746,578, which represented less than 1% of the outstanding Common Shares.

TRANSFER AGENT AND REGISTRAR

The transfer agents for MFC's Common Shares are as follows:

In Canada:
CST Trust Company
P.O. Box 700, Station B
Montreal, Quebec, Canada, H3B 3K3
Toll Free: 1-800-783-9495

www.canstockta.com/investor
www.canstockta.com/investisseur

In the United States:
Computershare Inc.
P.O. Box 30170
College Station, TX, 77842-3170
Toll Free: 1-800-249-7702

www.computershare.com/investor

In the Philippines:
Rizal Commercial Banking Corporation
Ground Floor, West Wing,
GPL (Grepalife) Building,
221 Senator Gil Puyat Avenue,
Makati City, Metro Manila, Philippines
Telephone: 632 318 8567

www.rcbc.com

In Hong Kong:
Computershare Hong Kong Investor Services Limited
17M Floor, Hopewell Centre
183 Queen's Road East
Wan Chai, Hong Kong
Telephone: (852) 2862-8555

www.computershare.com/investor

The transfer agent for MFC's Class A Shares and Class 1 Shares is CST Trust Company.

MATERIAL CONTRACTS

MFC entered into a trust indenture dated May 19, 2005 with CIBC Mellon Trust Company ("CIBC Mellon") (as amended, the "MFC Senior Debt Trust Indenture") setting out the terms of unsecured senior debentures that may be issued by MFC. MFC has entered into supplemental indentures to the MFC Senior Debt Trust Indenture with CIBC Mellon dated May 19, 2005, March 28, 2006, June 26, 2008 and April 8, 2009 setting out the terms of Medium Term Notes that were issued by MFC. MFC also entered into supplemental indentures to the MFC Senior Debt Trust Indenture with BNY Trust Company of Canada ("BNY Mellon Trust"), as trustee, The Bank of New York Mellon, London Branch ("BNY London"), as principal paying agent, and The Bank of New York Mellon (Luxembourg) S.A. ("BNY Luxembourg"), as registrar and transfer agent, dated June 23, 2016 and December 2, 2016 setting out the terms of senior notes that were issued by MFC.

MFC entered into a trust indenture dated September 17, 2010 with The Bank of New York Mellon ("BNY Mellon") setting out the terms of debentures that may be issued by MFC under a short form base shelf prospectus filed in Canada and the United States via registration statement on Form F-10 pursuant to the Multijurisdictional Disclosure System. MFC entered into a first supplemental indenture with BNY Mellon dated September 17, 2010 setting out the terms of two series of senior notes issued by MFC on September 17, 2010 by prospectus supplement to a short form base shelf prospectus. MFC entered into a second supplemental indenture with BNY Mellon dated March 4, 2016 setting out the terms of two additional series of senior notes issued by MFC dated March 4, 2016 by prospectus supplement to a new short form base shelf prospectus filed in Canada and the United States via registration statement on Form F-10 pursuant to the Multijurisdictional Disclosure System.

MFC entered into a trust indenture dated May 25, 2016 with BNY Mellon Trust (as amended, the "MFC Subordinated Debt Trust Indenture") setting out the terms of unsecured subordinated debentures that may be issued by MFC. MFC entered into a supplemental indenture to the MFC Subordinated Debt Trust Indenture with BNY

Mellon Trust, as trustee, BNY London, as principal paying agent and calculation agent, and BNY Luxembourg, as registrar and transfer agent dated May 25, 2016 setting out the terms of subordinated notes that were issued by MFC.

As at December 31, 2016, (i) an aggregate principal amount of $1.0 billion in Medium Term Notes, (ii) an aggregate principal amount of US$3.52 billion in senior notes, and (iii) an aggregate principal amount of Singapore $500 million in subordinated notes was issued and outstanding. More information about the Medium Term Notes and senior notes can be found at Note 11 of MFC's consolidated financial statements for the year ended December 31, 2016. More information about the subordinated notes can be found at Note 12 of MFC's consolidated financial statements for the year ended December 31, 2016.

Manufacturers Life entered into an amended and restated trust indenture dated November 18, 2011 with BNY Mellon Trust (amending and restating an indenture dated November 8, 2002) (the "Manufacturers Life Trust Indenture") setting out the terms of debentures that may be issued by Manufacturers Life. Manufacturers Life has entered into supplemental indentures to the Manufacturers Life Trust Indenture with BNY Mellon Trust dated February 17, 2012, February 25, 2013, November 29, 2013, February 21, 2014, December 1, 2014, March 10, 2015, June 1, 2015 and November 20, 2015 setting out the terms of fixed/floating subordinated debentures that were issued by Manufacturers Life.

In connection with the winding up of SCDA into Manufacturers Life on July 1, 2015, Manufacturers Life entered into the First Supplemental Indenture dated July 1, 2015 (the "SCDA Supplemental Indenture") with Computershare Trust Company of Canada ("Computershare") to the trust indenture dated as of September 21, 2012 between SCDA, as predecessor to Manufacturers Life, and Computershare (the "Indenture"), pursuant to which Manufacturers Life assumed SCDA's obligations for the due and punctual payment of the principal of and interest and premium, if any, on the 3.938% Fixed/Floating Series A Subordinated Debentures, due September 21, 2022 (the "SCDA Debentures") and the performance and observance of every covenant of the Indenture and any supplemental indentures in connection thereto.

In connection with each issuance of fixed/floating subordinated debentures, and the assumption by Manufacturers Life of the SCDA Debentures under the SCDA Supplemental Indenture, MFC entered into a subordinated guarantee whereby MFC fully and unconditionally guaranteed on a subordinated basis the payment of principal, premium, if any, interest and redemption price, if any, of the Manufacturers Life fixed/floating subordinated debentures, including the SCDA Debentures. More information about MFC's guarantees of the Manufacturers Life fixed/floating subordinated debentures and the SCDA Debentures can be found at Note 18 (d) of MFC's consolidated financial statements for the year ended December 31, 2016. As at December 31, 2016, an aggregate principal amount of $5.0 billion in subordinated debentures and the SCDA Debentures was issued and outstanding.

MFC entered into a trust indenture dated December 14, 2006 (the "MFLP Indenture") with CIBC Mellon and Manulife Finance (Delaware), L.P. ("MFLP") as the guarantor of the debentures of MFLP issued under the MFLP Indenture. Under the terms of the MFLP Indenture, MFC unconditionally and irrevocably guaranteed on a subordinated basis the payment of principal, premium, if any, interest and redemption price in respect of $650 million principal amount of 5.059% fixed/floating subordinated debentures of MFLP due December 15, 2041. More information about MFC's guarantee of the debentures issued by MFLP can be found at Note 18(d) of MFC's consolidated financial statements for the year ended December 31, 2016.

Trust II entered into a trust indenture dated July 10, 2009 with CIBC Mellon setting out the terms of debt obligations that may be issued by Trust II from time to time. Trust II entered into a first supplemental indenture with CIBC Mellon on July 10, 2009 setting out the terms of the $1 billion principal amount of Notes issued by Trust II on July 10, 2009. For more information about the Notes see "Dividends" in this AIF and Note 12 of MFC's consolidated financial statements for the year ended December 31, 2016.

MFC entered into a subordinated guarantee dated January 29, 2007, as amended and restated on January 13, 2017, of Class A Shares and Class B Shares of Manufacturers Life and any other class of preferred shares that rank on a parity with Class A Shares or Class B Shares of Manufacturers Life. The Class 1 Shares rank on a parity with the Class A Shares. As a result of this guarantee, Manufacturers Life has received an exemption from the requirements to file certain continuous disclosure materials with the Canadian securities regulatory authorities. More information about MFC's guarantee of the preferred shares of Manufacturers Life can be found at Note 18(d) of MFC's consolidated financial statements for the year ended December 31, 2016.

INTERESTS OF EXPERTS

Ernst & Young LLP, Chartered Professional Accountants, Licensed Public Accountants, Toronto, Canada, is the external auditor who prepared the Independent Auditors' Report of Registered Public Accounting Firm to the Shareholders on the audited financial statements of the Company and the Independent Auditors' Report on Internal Control under Standards of the Public Company Accounting Oversight Board (United States). Ernst & Young LLP is independent with respect to the Company within the meaning of the CPA Code of Professional Conduct of the Chartered Professional Accountants of Ontario (registered name of The Institute of Chartered Accountants of Ontario), United States federal securities laws and the rules and regulations thereunder, including the independence rules adopted by the SEC pursuant to the Sarbanes-Oxley Act of 2002 ("SOX") and is in compliance with Rule 3520 of the Public Company Accounting Oversight Board (United States).

AUDIT COMMITTEE

Audit Committee Charter

The Audit Committee has adopted a formal Charter that describes the Audit Committee's role and responsibilities. The Charter is set out in the attached Schedule 1.

The Audit Committee is responsible for assisting the Board in its oversight role with respect to the quality and integrity of financial information, the effectiveness of the Company's internal control over financial reporting, the effectiveness of the Company's risk management and compliance practices, the performance, qualifications and independence of the independent auditor, the Company's compliance with legal and regulatory requirements, the performance of the Company's finance, actuarial, internal audit and global compliance functions, and the procedures relating to conflicts of interest, confidential information, related party transactions, and customer complaints.

Composition of the Audit Committee in 2016

MFC's Audit Committee was composed of the following members in 2016: Sheila Fraser (Chair of the Audit Committee), Susan Dabarno, Luther Helms, Thomas Jenkins, John Palmer and Andrea Rosen. The Board has reviewed the committee membership and determined that all members are financially literate as required by the NYSE Listed Company Manual and the applicable instruments of the Canadian Securities Administrators. All committee members are independent, pursuant to applicable regulatory and stock exchange requirements. The Board has also determined that all current members have the necessary qualifications to be designated as audit committee financial experts under SOX.

Relevant Education and Experience

In addition to the general business experience of each member of the Audit Committee, the relevant education and experience of each member of MFC's Audit Committee in 2016 is as follows: Sheila Fraser holds a B. Comm from McGill University and is a Chartered Professional Accountant. Ms. Fraser is a former partner at Ernst & Young LLP and former Auditor General of Canada. Susan Dabarno holds a Class II Diploma from McGill University and is a Chartered Professional Accountant. Ms. Dabarno previously served as Executive Chair of Richardson Partners Financial Limited, as President and Chief Executive Officer of Richardson Partners Financial Limited and as President and Chief Operating Officer of Merrill Lynch Canada Inc. Luther Helms holds a BA from the University of Arizona and an MBA from the University of Santa Clara. Mr. Helms is Managing Director of Sonata Capital Group and previously served as Vice Chairman of KeyBank West and as Vice Chairman of Bank of America Corporation. Thomas Jenkins holds an MBA from the Schulich School of Business at York University, an MASc from the University of Toronto and a BEng & Mgt. from McMaster University. Mr. Jenkins is Chairman of the Board of OpenText Corporation and previously served as Chief Strategy Officer and as President and Chief Executive Officer of OpenText Corporation. John Palmer holds a BA from the University of British Columbia, is a Chartered Professional Accountant and is the former Deputy Chairman and Managing Partner of KPMG LLP (Canada) and the former Superintendent of OSFI. Andrea Rosen holds a BA from Yale University, an LLB from Osgoode Hall Law School and an MBA from the Schulich School of Business at York University. Ms. Rosen previously served as Vice Chair of TD Bank Financial Group and as President of TD Canada Trust.

Pre-Approval Policies and Procedures

All audit and permitted non-audit services to be provided by our independent auditor must be pre-approved pursuant to the Auditor Independence Policy (the "Policy"). Under the Policy, the Audit Committee annually reviews and pre-approves recurring audit and permitted non-audit services that are identifiable together with a budget for each type of permitted services for the coming year. The Policy also requires that any audit or permitted non-audit services that are proposed during the year outside of the previously approved categories or in excess of the pre-approved budget be pre-approved by the Audit Committee, or by a member of the Audit Committee appointed by the Audit Committee and acting on its behalf.

All audit and permitted non-audit services provided by Ernst & Young LLP have been pre-approved by the Audit Committee. The Audit Committee has reviewed these services to ensure that they are compatible with maintaining the auditor's independence.

External Auditor Service Fees

The table below sets out the fees charged by Ernst & Young LLP for services rendered to Manulife and its subsidiaries in each of the past two fiscal years.

Fees	2016 ($ in millions)	2015 ($ in millions)
Audit Fees: Includes the audit of our financial statements as well as the financial statements of our subsidiaries, segregated funds, audits of statutory filings, prospectus services, report on internal controls, reviews of quarterly reports and regulatory filings.	30.3	29.0
Audit-Related Fees: Includes consultation concerning financial accounting and reporting standards not classified as audit, due diligence in connection with proposed or consummated transactions and assurance services to report on internal controls for third parties.	2.2	2.6
Tax Fees: Includes tax compliance, tax planning and tax advice services.	0.3	0.1
All Other Fees: Includes other advisory services.	0.4	0.6
Total	**33.2**	**32.3**

PERFORMANCE AND NON-GAAP MEASURES

We use a number of non-GAAP financial measures to measure overall performance and to assess each of our businesses. A financial measure is considered a non-GAAP measure for Canadian securities law purposes if it is presented other than in accordance with Canadian generally accepted accounting principles used for the Company's audited historical financial statements. Non-GAAP measures referenced in this AIF include: Core Earnings (Loss); Constant Currency Basis; Premiums and Deposits; and Assets under Management and Administration. Non-GAAP financial measures are not defined terms under GAAP and, therefore, are unlikely to be comparable to similar terms used by other issuers. Therefore, they should not be considered in isolation or as a substitute for any other financial information prepared in accordance with GAAP.

For descriptions of the non-GAAP financial measures referred to above and reconciliations of certain non-GAAP financial measures to the most directly comparable measure calculated in accordance with GAAP, see "Performance and Non-GAAP Measures" in MFC's Management's Discussion and Analysis for the year ended December 31, 2016.

ADDITIONAL INFORMATION

Additional information with respect to the Company, including directors' and officers' remuneration and indebtedness, and securities authorized for issuance under MFC's equity compensation plans, where applicable, is contained in MFC's Management Information Circular for its most recent annual meeting of security holders that involved the election of directors. Additional financial information is provided in the Company's consolidated financial statements and the Company's Management's Discussion and Analysis for the year ended December 31, 2016. Copies of these documents and additional information relating to the Company may be found on SEDAR at www.sedar.com and is accessible at the Company's website, www.manulife.com. Requests for materials may be sent to the Shareholder Services Department of Manulife at 200 Bloor Street East, NT-10, Toronto, Canada M4W 1E5.

SCHEDULE 1 – AUDIT COMMITTEE CHARTER

Manulife Financial Corporation (the "Company")

Audit Committee Charter (December 2016)

1. Overall Role and Responsibility

1.1 The Audit Committee ("Committee") shall:

(a) assist the Board of Directors in its oversight role with respect to:

(i) the quality and integrity of financial information;

(ii) the effectiveness of the Company's internal control over financial reporting;

(iii) the effectiveness of the Company's risk management and compliance practices;

(iv) the independent auditor's performance, qualifications and independence;

(v) the Company's compliance with legal and regulatory requirements;

(vi) the Finance, Actuarial, Internal Audit and Global Compliance functions;

(vii) conflicts of interest and confidential information;

(viii) related party transactions; and

(ix) complaints of customers relating to obligations under the *Insurance Companies Act* (Canada) (the "Act"), and accounting, internal accounting controls and audit matters.

(b) prepare such reports of the Committee required to be included in the Proxy Circular in accordance with applicable laws or the rules of applicable securities regulatory authorities.

1.2 The Committee will also act as the conduct review committee of the Company.

2. Structure and Composition

2.1 The Committee shall consist of five or more Directors appointed by the Board of Directors on the recommendation of the Corporate Governance and Nominating Committee.

2.2 No member of the Committee shall be an officer or employee of the Company, its subsidiaries or affiliates. Members of the Committee will not be affiliated with the Company as such term is defined in the Act.

2.3 Each member of the Committee shall satisfy the applicable independence and experience requirements of the laws governing the Company, the applicable stock exchanges on which the Company's securities are listed and applicable securities regulatory authorities.

2.4 The Board of Directors shall designate one member of the Committee as the Committee Chair.

2.5 Members of the Committee shall serve at the pleasure of the Board of Directors for such term or terms as the Board of Directors may determine.

2.6 Each member of the Committee shall be financially literate as such qualification is defined by applicable law and interpreted by the Board of Directors in its business judgment.

2.7 The Board of Directors shall determine whether and how many members of the Committee qualify as a financial expert as defined by applicable law. At least one member must be an audit committee financial expert, as defined in applicable laws and regulations.

2.8 The Committee shall annually determine whether any of its members serve on the audit committee of more than three public companies (including the Committee). If any of the Committee members fall into this category, the Committee shall consider the ability of such members to effectively serve on the Committee and, if it is determined that such members are able to continue serving, the Committee shall record the reasons for such a decision.

3. Structure, Operations and Assessment

3.1 The Committee shall meet quarterly or more frequently as the Committee may determine. The Committee shall report to the Board of Directors on its activities after each of its meetings.

3.2 The affirmative vote of a majority of the members of the Committee participating in any meeting of the Committee is necessary for the adoption of any resolution.

3.3 The Committee may create one or more subcommittees and may delegate, in its discretion, all or a portion of its duties and responsibilities to such subcommittees.

3.4 The Committee shall, on an annual basis:

(a) review and assess the adequacy of this Charter and, where necessary, recommend changes to the Board of Directors for its approval;

(b) undertake a performance evaluation of the Committee comparing the performance of the Committee with the requirements of this Charter; and

(c) report the results of the performance evaluation to the Board of Directors.

The performance evaluation by the Committee shall be conducted in such manner as the Committee deems appropriate. The report to the Board of Directors may take the form of an oral report by the chair of the Committee or any other member of the Committee designated by the Committee to make this report.

3.5 The Committee is expected to establish and maintain free and open communication with management, the independent auditor, the internal auditor and the Appointed Actuary and shall periodically meet separately with each of them.

4. Specific Duties

The Committee will carry out the following specific duties:

4.1 Oversight of the Independent Auditor

(a) Recommend to the Board for approval the appointment and, when considered appropriate, the dismissal or removal of the independent auditor for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Company (subject to shareholder ratification).

(b) Review and approve the scope and terms of all audit engagements and recommend to the Board the compensation of the independent auditor.

(c) Provide the oversight of the work of the independent auditor engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services (including resolution of disagreements between management and the independent auditor regarding financial reporting). The independent auditor shall report directly to the Committee.

(d) Pre-approve all audit services and permitted non-audit services (including the fees, terms and conditions for the performance of such services) to be provided by the independent auditor.

(e) When appropriate, the Committee may delegate to one or more members the authority to grant preapprovals of audit and permitted non-audit services and the full Committee shall be informed of each non-audit service.

(f) Review the decisions of such delegates under subsection (e) above, which shall be presented to the full Committee at its next scheduled meeting.

(g) Evaluate the qualifications, performance and independence of the independent auditor, including:

(i) reviewing and evaluating the lead partner on the independent auditor's engagement with the Company;

(ii) considering whether the auditor's quality controls are adequate and the provision of permitted non-audit services are compatible with maintaining the auditor's independence; and

(iii) addressing any concerns raised by regulatory authorities or other stakeholders regarding the auditor's independence.

(h) Present its conclusions with respect to the independent auditor to the Board of Directors and, if so determined by the Committee, recommend that the Board of Directors take additional action to satisfy itself of the qualifications, performance and independence of the independent auditor.

(i) Obtain and review a report from the independent auditor at least annually regarding:

(i) the independent auditor's internal quality-control procedures;

(ii) any material issues raised by the most recent internal quality-control review, or peer review, of the firm, or by any inquiry or investigation by governmental or professional authorities within the preceding five years respecting one or more independent audits carried out by the firm;

(iii) any steps taken to deal with any such issues; and

(iv) all relationships between the independent auditor and the Company.

(j) At least annually, review and approve the audit plan (including any significant changes to the audit plan) and, as part of this review, satisfy itself that the audit plan is risk-based and addresses all the relevant activities over a measurable cycle and that the work of the independent auditor and Internal Audit is coordinated.

(k) Ensure the rotation of the lead (or coordinating) audit partner having primary responsibility for the audit and the audit partner responsible for reviewing the audit as required by law.

(l) Review and approve policies for the Company's hiring of partners and employees or former partners and employees of the independent auditor.

4.2 Financial Reporting

(a) Review and discuss with management and the independent auditor the annual audited financial statements, the results of the audit, any changes to the audit scope or strategy, the annual report of the auditors on the statements and any other returns or transactions required to be reviewed by the Committee and report to the Board of Directors prior to approval by the Board of Directors and the publication of earnings.

(b) Review such returns of the Company as the Superintendent of Financial Institutions (Canada) (the "Superintendent") may specify.

(c) Review and discuss with the independent auditor and with management the Company's annual and quarterly financial disclosures, including management's discussion and analysis. The Committee shall approve any reports for inclusion in the Company's Annual Report, as required by applicable legislation and make a recommendation thereon to the Board.

(d) Review the Company's disclosure policy, which governs the release of information about the Company and requires timely, accurate and fair disclosure of such information in compliance with all legal and regulatory requirements, and periodically assess the adequacy of procedures regarding disclosure of financial information.

(e) Require management to implement and maintain appropriate internal control procedures.

(f) Oversee systems of internal control and meet with the heads of the oversight functions, management and the independent auditors to assess the adequacy and effectiveness of these systems and to obtain reasonable assurance that the controls are effective.

(g) Review and discuss with management and the independent auditor management's report on its assessment of internal controls over financial reporting and the independent auditor's attestation report on management's assessment.

(h) Review, evaluate and approve the procedures established under s. 4.2(e).

(i) Review such investments and transactions that could adversely affect the well-being of the Company as the auditor or any officer of the Company may bring to the attention of the Committee.

(j) Review and discuss with management and the independent auditor the Company's quarterly financial statements prior to the publication of earnings, including:

  (i) the results of the independent auditor's review of the quarterly financial statements; and

  (ii) any matters required to be communicated by the independent auditor under applicable review standards.

(k) Review and discuss with management and the independent auditor at least annually significant financial reporting issues and judgments made in connection with the preparation of the Company's financial statements, including:

  (i) key areas of risk for material misstatement of the financial statements, including critical accounting estimates or areas of measurement uncertainty;

  (ii) whether the auditor considers estimates to be within an acceptable range and the rationale for the final valuation decision and whether it is consistent with industry practice;

  (iii) any significant changes in the Company's selection or application of accounting or actuarial principles;

  (iv) any major issues as to the adequacy of the Company's internal controls;

  (v) any special steps adopted in light of material control deficiencies, if any; and

  (vi) the role of any other audit firms.

(l) Review and discuss with management and the independent auditor at least annually reports from the independent auditor on:

  (i) critical accounting policies and practices to be used;

  (ii) significant financial reporting issues, estimates and judgments made in connection with the preparation of the financial statements;

  (iii) alternative treatments of financial information within generally accepted accounting principles that have been discussed with management, ramifications of the use of such alternative disclosures and treatments, and the treatment preferred by the independent auditor; and

(iv) other material written communications between the independent auditor and management, such as any management letter or schedule of unadjusted differences.

(m) Meet with the independent auditor to discuss the annual financial statements and any investments or transactions that may adversely affect the well-being of the Company.

(n) Discuss with the independent auditor at least annually any “management” or “internal control” letters issued or proposed to be issued by the independent auditor to the Company and review all material correspondence between the independent auditor and management related to audit findings.

(o) Review and discuss with management and the independent auditor at least annually any significant changes to the Company’s accounting and actuarial principles and practices suggested by the independent auditor, internal audit personnel or management and assess whether the Company’s accounting and actuarial practices are appropriate and within the boundaries of acceptable practice.

(p) Discuss with management and approve the Company’s earnings press releases, the release of earnings projections, forecast or guidance and the use of non-GAAP financial measures (if any), and the financial information provided to analysts and rating agencies.

(q) Review and discuss with management and the independent auditor at least annually the effect of regulatory and accounting initiatives as well as off-balance-sheet structures on the Company’s financial statements.

(r) Discuss with the independent auditor matters required to be discussed by American Institute of Certified Public Accountants Statement on Auditing Standards No. 61 relating to the conduct of the audit, including any difficulties encountered in the course of the audit work, any restrictions on the scope of activities or access to requested information and any significant disagreements with management.

(s) Review and discuss with the Chief Executive Officer and the Chief Financial Officer the procedures undertaken in connection with the Chief Executive Officer and Chief Financial Officer certifications for the annual and interim filings with applicable securities regulatory authorities.

(t) Review disclosures made by the Company’s Chief Executive Officer and Chief Financial Officer during their certification process for the annual and interim filing with applicable securities regulatory authorities about any significant deficiencies in the design or operation of internal controls which could adversely affect the Company’s ability to record, process, summarize and report financial data or any material weaknesses in the internal controls, and any fraud involving management or other employees who have a significant role in the Company’s internal controls.

(u) Meet with the Appointed Actuary of the Company at least annually to receive and review reports, opinions and recommendations prepared by the Appointed Actuary in accordance with the Act, including the parts of the annual financial statement and the annual return filed under s. 665 of the Act, prepared by the actuary, and such other matters as the Committee may direct, including the report on Dynamic Capital Adequacy Testing, which is also reviewed by the Risk Committee.

(v) Receive reports from the Chief Actuary regarding material capital model modifications and new capital model applications. Annually receive the capital model inventory and modification log.

(w) Discuss with the Company’s General Counsel at least annually any legal matters that may have a material impact on the financial statements, operations, assets or compliance policies and any material reports or inquiries received by the Company or any of its subsidiaries from regulators or governmental agencies.

(x) Meet with the Chief Internal Auditor and with management to discuss the effectiveness of the internal control procedure established pursuant to s. 4.2(e).

4.3 Oversight of the Finance Function

(a) At least annually review and approve the mandate of the Chief Financial Officer and the Finance function.

(b) At least annually, review and approve the budget, structure, skills and resources of the Finance function.

(c) At least annually, review the performance evaluation of the Chief Financial Officer, with the input of the Management Resources and Compensation Committee, and assess the effectiveness of the Chief Financial Officer and the Finance function.

(d) Recommend to the Board for approval the appointment and, when considered appropriate, the dismissal of the Chief Financial Officer, who shall have direct access to the Committee.

(e) Review the results of periodic independent reviews of the Finance function.

4.4 Oversight of the Actuarial Function

(a) At least annually, review and approve the mandate for the Chief Actuary and the Actuarial function.

(b) At least annually, review and approve the budget, structure, skills and resources of the Actuarial

function.

(c) At least annually, review the performance evaluation of the Chief Actuary, with the input of the Management Resources and Compensation Committee, and assess the effectiveness of the Chief Actuary and the Actuarial function.

(d) Recommend to the Board for approval the appointment and, when considered appropriate, the dismissal of the Chief Actuary, who shall have direct access to the Committee.

(e) Review the results of periodic independent reviews of the Actuarial function.

4.5 Oversight of the Internal Audit Function

(a) At least annually, review and approve the mandate of the Chief Auditor and the Internal Audit function.

(b) At least annually, review and approve the budget, structure, skills, resources, independence and qualifications of the Internal Audit function.

(c) At least annually, review and approve the audit plan of the Internal Audit function (including any significant changes to the audit plan) and, as part of this review, satisfy itself that the audit plan is risk-based and addresses all the relevant activities over a measurable cycle and that the work of the independent auditor and Internal Audit is coordinated.

(d) Review the periodic reports of the internal audit department on internal audit activities, including audit findings, recommendations and progress in meeting the annual audit plan (including the impact of any resource limitations).

(e) At least annually, review the performance evaluation and compensation of the Chief Auditor, with the input of the Management Resources and Compensation Committee, and assess the effectiveness of the Chief Auditor and the Internal Audit function.

(f) Recommend to the Board for approval the appointment and, when considered appropriate, the dismissal of the Chief Auditor, who shall have direct access to the Committee.

(g) Review the results of periodic independent reviews and self-assessments of the Internal Audit function's conformance with the International Standards for the Professional Practice of Internal Auditing and Code of Ethics, and action plans to address any significant conformance issues.

4.6 Risk Management Oversight

(a) Review reports from the Risk Committee respecting the Company's processes for assessing and managing risk.

(b) The Committee will receive reports from the General Counsel as Chair of the Disclosure Committee.

4.7 Oversight of Regulatory Compliance and Complaint Handling

(a) Establish procedures for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters, and the confidential, anonymous submission by employees of concerns regarding questionable accounting or auditing matters.

(b) Discuss with management and the independent auditor at least annually any correspondence with regulators or governmental agencies and any published reports which raise material issues regarding the Company's financial statements or accounting.

(c) Review at least annually with the Global Compliance Chief the Company's compliance with applicable laws and regulations, and correspondence from regulators.

4.8 Oversight of the Global Compliance Function

(a) At least annually, review and approve the mandate for the Global Compliance Chief and the Global Compliance function.

(b) At least annually, review and approve the budget, structure, skills and resources of the Global Compliance function.

(c) At least annually, review the performance evaluation of the Global Compliance Chief, with the input of the Management Resources and Compensation Committee, and assess the effectiveness of the Global Compliance Chief and the Global Compliance function.

(d) Recommend to the Board for approval, the appointment and, when considered appropriate, the dismissal of the Global Compliance Chief, who shall have direct access to the Committee.

(e) Review the results of periodic independent reviews of the Global Compliance function.

4.9 Oversight of the Anti-Money Laundering and Anti-Terrorist Financing Program

(a) The Committee shall approve the Company's Anti-Money Laundering and Anti-Terrorist Financing Policy and any material amendments.

(b) The Committee shall meet with the Chief Anti-Money Laundering Officer ("CAMLO") at least annually to receive and review the CAMLO's report on the AML/ATF Program, which will include a report on the effectiveness of the AML/ATF Program and the Company's compliance with the Policy.

(c) The Committee shall meet with the Chief Auditor at least annually to receive and review the Chief Auditor's report on the results of the testing of the effectiveness of the AML/ATF Program.

4.10 Review of Ethical Standards

(a) Annual review of the Company's Code of Business Conduct and Ethics.

(b) Establish procedures to receive and process any request from executive officer(s) and Director(s) for waiver of the Company's Code of Business Conduct and Ethics.

(c) Grant any waiver of the Company's Code of Business Conduct and Ethics to executive officer(s) and Director(s) as the Committee may in its sole discretion deem appropriate and arrange for any such waiver to be promptly disclosed to the shareholders in accordance with applicable laws or the rules of applicable securities regulatory authorities.

(d) Annual review and assessment of procedures established by the Board of Directors to resolve conflicts of interest, including techniques for identification of potential conflict situations, and for restricting the use of confidential information.

4.11 Self Dealing and Disclosure Requirements

(a) Require management to establish procedures for complying with Part XI (Self-Dealing) of the Act (the "Related Party Procedures").

(b) Establish criteria for the determination of materiality of a transaction with a related party.

(c) Annual review of the Related Party Procedures and their effectiveness in ensuring that the Company is complying with Part XI of the Act and the Sarbanes-Oxley Act.

(d) Review the practices of the Company to ensure that any transactions with related parties of the Company that may have a material effect on the stability or solvency of the Company are identified.

(e) Ensure that, within 90 days after the end of each financial year of the Company, the Committee will report to the Superintendent on its activities of the previous year respecting conduct review, undertaken in carrying out its responsibilities under the Act (and, in particular, in respect of (a), (c), and (d) above).

(f) The Committee shall report to the Superintendent on its mandate respecting conduct review and responsibilities of the Committee and the procedures referred to in (a) above.

(g) Annual review and assessment of the procedures established by the Board of Directors to disclose information to customers of the Company under the Act, if applicable, and of the procedures for dealing with complaints of customers of the Company to satisfy itself that the applicable procedures are being followed.

4.12 Proxy Circular

(a) The Committee shall prepare a report on its activities on an annual basis to be included in the Proxy Circular, as may be required by applicable laws or rules of applicable securities regulatory authorities.

4.13 Duties and Responsibilities Delegated by the Board

(a) Exercise such other powers and perform such other duties and responsibilities as are incidental to the purposes, duties and responsibilities specified herein and as may from time to time be delegated to the Committee by the Board of Directors.

5. Funding for the Independent Auditor and Retention of External Advisors

The Company shall provide for appropriate funding, as determined by the Committee, for payment of compensation to the independent auditor for the purpose of issuing an audit report and to any advisors retained by the Committee. The Committee shall have the authority to retain such independent advisors as it may from time to time deem necessary or advisable for its purposes and to set the terms of the retainer. The expenses related to any such engagement shall also be funded by the Company.

Exhibit 99.4

Certification of Annual Filings

Manulife Financial Corporation

I, Donald A. Guloien, certify that:

1. I have reviewed this annual report on Form 40-F of Manulife Financial Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;
4. The issuer's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:
   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and
5. The issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):
   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and
   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: February 9, 2017

/s/ Donald A. Guloien

Donald A. Guloien
President and Chief Executive Officer

Exhibit 99.5

Certification of Annual Filings

Manulife Financial Corporation

I, Stephen B. Roder, certify that:

1. I have reviewed this annual report on Form 40-F of Manulife Financial Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: February 9, 2017

/s/ Stephen B. Roder

Stephen B. Roder
Senior Executive Vice President and Chief Financial Officer

Exhibit 99.6

CERTIFICATION
Pursuant to 18 United States Code s. 1350
As adopted pursuant to
Section 906 of the Sarbanes–Oxley Act of 2002

In connection with the Annual Report on Form 40-F of Manulife Financial Corporation (the "Company") for the year ended December 31, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned officer of the Company certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to his knowledge:

1. The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 9, 2017

/s/ Donald A. Guloien
Name: Donald A. Guloien
Title: President and Chief Executive Officer

Exhibit 99.7

CERTIFICATION
Pursuant to 18 United States Code s. 1350
As adopted pursuant to
Section 906 of the Sarbanes–Oxley Act of 2002

In connection with the Annual Report on Form 40-F of Manulife Financial Corporation (the "Company") for the year ended December 31, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned officer of the Company certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to his knowledge:

1. The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 9, 2017

/s/ Stephen B. Roder
Stephen B. Roder
Senior Executive Vice President and Chief Financial Officer

Exhibit 99.8

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the reference to our firm under the caption “interests of experts” and to the use of our reports dated February 9, 2017 relating to the consolidated financial statements of Manulife Financial Corporation (the “Company”), and the effectiveness of the Company’s internal control over financial reporting included in the 2016 Annual Report (Form 40-F) for the year ended December 31, 2016.

We also consent to the incorporation by reference and to the use of these reports dated February 9, 2017 in the following Registration Statements:

- Registration Statement (Form S-8 No. 333-12610) of Manulife Financial Corporation pertaining to the Manulife Financial Corporation Stock Plan for Non-Employee Directors and Executive Stock Option Plan;
- Registration Statement (Form S-8 No. 333-13072) of Manulife Financial Corporation pertaining to the Manulife Financial Corporation Global Share Ownership Plan;
- Registration Statement (Form S-8 No. 333-157326) of Manulife Financial Corporation pertaining to the Stock Plan for Non-Employee Directors, Executive Stock Option Plan and Global Share Ownership Plan;
- Registration Statement (Form S-8 No. 333-114951) of Manulife Financial Corporation pertaining to the John Hancock Financial Services, Inc. 1999 Long-Term Stock Incentive Plan, as amended and the John Hancock Financial Services, Inc. Non-Employee Directors’ Long-Term Stock Incentive Plan;
- Registration Statement (Form S-8 No. 333-129430) of Manulife Financial Corporation pertaining to the Deferred Compensation Plan for Certain Employees of John Hancock and the Deferred Compensation Plan of the John Hancock Financial Network;
- Registration Statement (Form S-8 No. 333-211366) of Manulife Financial Corporation pertaining to the Deferred Compensation Plan for Certain Employees of John Hancock Deferred Compensation Plan for the John Hancock Financial Network;
- Registration Statement (Form F-10 No. 333-208442) of Manulife Financial Corporation pertaining to Manulife Financial Corporation’s shelf prospectus offering Debt Securities, Preferred Shares, Common Shares, Subscription Receipts, Warrants, Share Purchase Contracts and Units;
- Registration Statement (Form F-3 Nos. 333-208663-01 and 333-208663) of Manulife Financial Corporation and John Hancock Life Insurance Company (U.S.A.) pertaining to John Hancock Life Insurance Company (U.S.A.)’s market value adjustment interests under deferred annuity contracts;
- Registration Statement (Form F-3 Nos. 333-205595-01 and 333-205595) of Manulife Financial Corporation and John Hancock Life Insurance Company (U.S.A.) pertaining to John Hancock Life Insurance Company (U.S.A.)’s market value adjustment interests under deferred annuity contracts and Manulife Financial Corporation’s subordinated guarantee relating thereto;
- Registration Statement (Form F-3 Nos. 333-196805-01 and 333-196805 of Manulife Financial Corporation and John Hancock Life Insurance Company (U.S.A.) pertaining to deferred annuity contracts with market value adjustment interests and Manulife Financial Corporation’s subordinated guarantee relating thereto; and
- Registration Statement (Form F-3 No. 333-159176) of Manulife Financial Corporation pertaining to the Manulife Financial Corporation Dividend Reinvestment and Share Purchase Plan for U.S. Shareholders.

/s/ “Ernst & Young LLP”

Toronto, Canada
February 9, 2017

Chartered Professional Accountants
Licensed Public Accountants

Exhibit 99.9

CONSENT OF APPOINTED ACTUARY

I hereby consent to the use and incorporation by reference in this Annual Report on Form 40-F of Manulife Financial Corporation (the "Company") for the year ended December 31, 2016 of my Appointed Actuary's Report to the Shareholders and Directors dated February 9, 2017 (the "Report"), relating to the valuation of the policy liabilities of the Company for its Consolidated Balance Sheets as at December 31, 2016 and 2015 and their change in the Consolidated Statements of Operations for the years then ended.

/s/ Steven A. Finch

Steven A. Finch
Executive Vice President and Chief Actuary
Fellow, Canadian Institute of Actuaries
Toronto, Canada

Date: February 9, 2017