# 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**

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

**For the fiscal year ended December 31, 2012** **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. None.

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

¨ Annual Information Form þ 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 | **1,827,721,539** |
| Class A Shares, Series 1 | 14,000,000 |
| Class A Shares, Series 2 | 14,000,000 |
| Class A Shares, Series 3 | 12,000,000 |
| Class A Shares, Series 4 | 18,000,000 |
| Class 1 Shares Series 1 | 14,000,000 |
| Class 1 Shares Series 3 | 8,000,000 |
| 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 |

Indicate by check mark whether the Registrant by filing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934 (the "Exchange Act"). If "Yes" is marked, indicate the file number assigned to the Registrant in connection with such Rule.

Yes ¨ No þ

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 þ 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 and 99.2 hereto, are hereby incorporated by reference into this Annual Report:

(a) Consolidated Financial Statements for the fiscal year ended December 31, 2012; and

(b) Management's Discussion and Analysis for the fiscal year ended December 31, 2012.

**Certifications and Disclosure Regarding Controls and Procedures.**

(a) Certifications. See Exhibits 99.3 and 99.4 to this Annual Report on Form 40-F.

(b) Disclosure Controls and Procedures. The required disclosure has been provided under the heading “Critical Accounting and Actuarial Policies – Controls and Procedures – Disclosure Controls and Procedures” in the Company’s Management’s Discussion and Analysis for the fiscal year ended December 31, 2012, filed as Exhibit 99.2 to this annual Report on Form 40-F.

(c) Management’s Annual Report on Internal Control over Financial Reporting. The required disclosure has been provided under the heading “Critical Accounting and Actuarial Policies - 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, 2012, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

(d) Attestation Report of the Registered Public Accounting Firm. The required disclosure has been provided under the heading “Independent Auditors’ Report on Internal Controls 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, 2012, filed as Exhibit 99.1 to this Annual Report on Form 40-F.

(e) Changes in Internal Control Over Financial Reporting. The required disclosure has been provided under the heading “Critical Accounting and Actuarial Policies - 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, 2012, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

**Audit Committee Financial Expert.**

The Board of Directors of the Company has determined that each of Messrs. DeWolfe, Dineen, Jr., Harding, Helms and Palmer and Ms. S. Fraser and Ms. A. Rosen, (the “Financial Experts”) has the necessary qualifications to be designated as an “audit committee financial expert” (within the meaning of applicable Securities and Exchange Commission rules). The Financial Experts are independent, as that term is defined by the New York Stock Exchange’s listing standards. The Board’s determination does not make these directors “experts” for any purposes or impose greater duties, obligations or liabilities on them nor does it affect duties, obligations or liabilities of other members of the Board.

**Code of 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 available for viewing at: http://manulife.com/public/files/201/1/CodeofBusinessConductandEthics.pdf

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.**

The following table represents the fees billed by Ernst & Young LLP to the Manulife Financial group of companies in 2012 and 2011.

| (Canadian $ in millions) | Year ended December 31, 2012 | Year ended December 31, 2011 |
|---|---|---|
| Audit fees [1] | $ 25.9 | $ 25.6 |
| Audit-related fees [2] | 1.9 | 2.3 |
| Tax fees [3] | 0.4 | 0.2 |
| All other fees [4] | 1.6 | 0.7 |
| Total | $ 29.8 | $ 28.8 |

[1] Includes the audit of the financial statements of the Company, its subsidiaries, segregated and separate funds, audits of statutory filings, prospectus services, *Sarbanes-Oxley Act of 2002* ("SOX") attestations, reviews of quarterly reports, statutory audits and regulatory filings.

[2] Includes reviews of product filing registration statements, consultation concerning financial accounting and reporting standards, and due diligence in connection with proposed or consummated transactions.

[3] Includes tax compliance, tax planning and tax advice services.

[4] Includes information security and other advisory services.

**Pre-Approval Policies and Procedures.**

The Audit Committee ("Audit Committee") reviews all requests for proposed audit or permitted non-audit services to be provided by the Company's independent auditor under the Audit Committee's Protocol for Approval of Audit and Permitted Non-Audit Services (the "Protocol"). Under the Protocol, the Audit Committee annually reviews and pre-approves recurring audit and non-audit services that are identifiable for the coming year. The Protocol also requires that any audit or non-audit services that are proposed during the year be 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 non-audit services provided to the Company by Ernst & Young LLP have been pre-approved by the Audit Committee pursuant to the Protocol. The Audit Committee has reviewed the magnitude and nature of these services to ensure that they are compatible with maintaining the independence of the external auditor.

**Off-Balance Sheet Arrangements.**

In addition to the discussion of risk in Management's Discussion and Analysis for the fiscal year ended December 31, 2012, 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, 2012, 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 18 Consolidated Investments

Note 19 Commitments and Contingencies

**Tabular Disclosure of Contractual Obligations.**

The required disclosure has been provided under the heading "Contractual Obligations" in the Company's Management's Discussion and Analysis, filed as Exhibit 99.2 to this Annual Report on Form 40-F.

**Identification of the Audit Committee.**

The Company has a separately-designated standing audit committee established in accordance with section 3(a)(58)(A) of the Exchange Act. The members of the Audit Committee are:

| | |
|---|---|
| Richard B. DeWolfe (Chair) | Robert J. Harding |
| Susan F. Dabarno | Luther S. Helms |
| Robert E. Dineen, Jr. | John R. V. Palmer |
| Sheila S. M. Fraser | Andrea S. Rosen |

**Disclosure Pursuant to the Requirements of the New York Stock Exchange**.

Independence of Directors

Based on the standards established by the New York Stock Exchange, the Board of Directors of the Company has determined that all but one member of the Board is independent. Donald A. Guloien is not independent because he is the Company's President and Chief Executive Officer. The Board has determined that no other Director is in a relationship with the Company that would cause the Director to lose his or her status as independent.

Presiding Director at Meetings of Non-Management Directors

Each meeting of the Board and of its Committees is followed by an *in camera* meeting at which the independent Chair of the Board or the independent Chair of one of the Committees of the Board acts as Chair of the meeting.

Communication with Non-Management Directors

Shareholders wishing to contact non-management Directors of the Company may write to the Chair 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 has established corporate governance guidelines in accordance with the requirements of the New York Stock Exchange. These guidelines, which the Company calls Corporate Governance Practices, are available for viewing on the Company's website at:

http://manulife.com/public/files/201/1/SA-StatementCGP2010.pdf

The Company's corporate governance practices comply with the domestic issuer corporate governance requirements of the New York Stock Exchange Rules.

Board Committee Charters

The Company has established Board committee charters in accordance with the requirements of the New York Stock Exchange, which are available for viewing on the Company's website at:

http://manulife.com/public/about/index/0,,lang=en&navId=610011,00.html

Requests for print copies of the above documents available for viewing on the Company's website should be made by contacting the Corporate Secretary at the head office of the Company.

## 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 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 March 15, 2013.

**Manulife Financial Corporation**

By: */s/ Angela K. Shaffer*
Name: Angela K. Shaffer
Title: Vice President and Corporate Secretary

**EXHIBIT INDEX**

| Exhibit | Description |
|---|---|
| 99.1 | Consolidated Financial Statements for the fiscal year ended December 31, 2012 |
| 99.2 | Management's Discussion and Analysis for the fiscal year ended December 31, 2012 |
| 99.3 | Certification of Chief Executive Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934 |
| 99.4 | Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934 |
| 99.5 | Section 1350 Certification of Chief Executive Officer |
| 99.6 | Section 1350 Certification of Chief Financial Officer |
| 99.7 | Consent of Auditors |
| 99.8 | Consent of Appointed Actuary |

Exhibit 99.1

Manulife Financial
For your future™

# Manulife Financial Corporation

## *Consolidated Financial Statements*

### For the year ended December 31, 2012



# 2012 MANULIFE FINANCIAL CORPORATION

# Consolidated Financial Statements

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# 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.

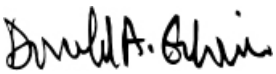
Appropriate systems of internal control, policies and procedures have been maintained to ensure that financial information is both relevant and reliable. The systems of internal control are assessed on an ongoing basis by management and the Company's internal audit department.

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

March 15, 2013

# Appointed Actuary's Report to the Shareholders

I have valued the policy liabilities of Manulife Financial Corporation for its Consolidated Statements of Financial Position as at December 31, 2012 and 2011 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 makes appropriate provision for all policyholder obligations and the consolidated financial statements fairly present the results of the valuation.



Cindy Forbes, F.C.I.A.
Executive Vice President and Appointed Actuary

Toronto, Canada

March 15, 2013

# 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, 2012 and 2011 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, 2012 and 2011 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, 2012, based on the criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 15, 2013 expressed an unqualified opinion on Manulife Financial Corporation's internal control over financial reporting.

Ernst & Young LLP
Chartered Accountants
Licensed Public Accountants

Toronto, Canada

March 15, 2013

# Independent Auditors' Report on Internal Controls 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, 2012, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (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 Controls over Financial Reporting contained in 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.

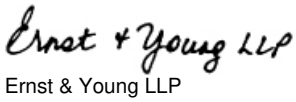
We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material 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 generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

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

In our opinion, Manulife Financial Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, 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, 2012 and 2011 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 March 15, 2013 expressed an unqualified opinion thereon.



Ernst & Young LLP
Chartered Accountants
Licensed Public Accountants

Toronto, Canada

March 15, 2013

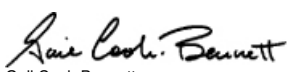
# Consolidated Statements of Financial Position

| As at December 31, (Canadian $ in millions) | 2012 | 2011 |
|---|---|---|
| **ASSETS** | | |
| Cash and short-term securities | **$ 13,484** | $ 12,813 |
| Securities | | |
| Bonds | **119,281** | 120,487 |
| Stocks | **11,995** | 10,243 |
| Loans | | |
| Mortgages | **35,082** | 35,023 |
| Private placements | **20,275** | 20,294 |
| Policy loans | **6,793** | 6,827 |
| Bank loans | **2,142** | 2,288 |
| Real estate | **8,513** | 7,466 |
| Other invested assets | **12,363** | 11,079 |
| **Total invested assets** (note 4) | **$ 229,928** | $ 226,520 |
| **Other assets** | | |
| Accrued investment income | **$ 1,802** | $ 1,802 |
| Outstanding premiums | **1,009** | 781 |
| Derivatives (note 5) | **14,707** | 15,472 |
| Reinsurance assets (note 8) | **18,681** | 10,728 |
| Deferred tax asset (note 6) | **3,148** | 1,757 |
| Goodwill and intangible assets (note 7) | **5,113** | 5,442 |
| Miscellaneous | **3,683** | 3,542 |
| **Total other assets** | **$ 48,143** | $ 39,524 |
| **Segregated funds net assets** (note 23) | **$ 207,985** | $ 195,933 |
| **Total assets** | **$ 486,056** | $ 461,977 |
| **LIABILITIES and EQUITY** | | |
| **Liabilities** | | |
| Policy liabilities | | |
| Insurance contract liabilities (note 8) | **$ 199,588** | $ 190,366 |
| Investment contract liabilities (note 9) | **2,424** | 2,540 |
| Bank deposits | **18,857** | 18,010 |
| Derivatives (note 5) | **7,206** | 7,627 |
| Deferred tax liability (note 6) | **694** | 766 |
| Other liabilities | **14,253** | 12,341 |
| | **$ 243,022** | $ 231,650 |
| Long-term debt (note 12) | **5,452** | 5,503 |
| Liabilities for preferred shares and capital instruments (note 13) | **3,501** | 4,012 |
| **Segregated funds net liabilities** (note 23) | **207,985** | 195,933 |
| **Total liabilities** | **$ 459,960** | $ 437,098 |
| **Equity** | | |
| Issued share capital | | |
| Preferred shares (note 14) | **$ 2,497** | $ 1,813 |
| Common shares (note 14) | **19,886** | 19,560 |
| Contributed surplus | **257** | 245 |
| Shareholders' retained earnings | **3,178** | 2,501 |
| Shareholders' accumulated other comprehensive income (loss) | | |
| On available-for-sale securities | **366** | 104 |
| On cash flow hedges | **(50)** | (91) |
| On translation of foreign operations | **(685)** | 83 |
| Total shareholders' equity | **$ 25,449** | $ 24,215 |
| Participating policyholders' equity | **146** | 249 |
| Non-controlling interest in subsidiaries | **501** | 415 |
| **Total equity** | **$ 26,096** | $ 24,879 |
| **Total liabilities and equity** | **$ 486,056** | $ 461,977 |

The accompanying notes are an integral part of these consolidated financial statements.



Donald A. Guloien
President and Chief Executive Officer



Gail Cook-Bennett
Chair of the Board of Directors

# Consolidated Statements of Income

| For the years ended December 31, (Canadian $ in millions except per share amounts) | 2012 | 2011 |
|---|---|---|
| **Revenue** | | |
| Premium income | | |
| Gross premiums | **$ 25,157** | $ 23,898 |
| Premiums ceded to reinsurers | **(7,194)** | (6,394) |
| Net premium income prior to fixed deferred annuity coinsurance | **$ 17,963** | $ 17,504 |
| Premiums ceded relating to fixed deferred annuity coinsurance (note 8(c)) | **(7,229)** | – |
| Net premium income | **$ 10,734** | $ 17,504 |
| Investment income (note 4) | | |
| Investment income | **$ 8,792** | $ 10,367 |
| Realized and unrealized gains on assets supporting insurance and investment contract liabilities | **3,050** | 15,870 |
| Net investment income | **$ 11,842** | $ 26,237 |
| Other revenue | **$ 7,356** | $ 7,242 |
| **Total revenue** | **$ 29,932** | $ 50,983 |
| **Contract benefits and expenses** | | |
| To contract holders and beneficiaries | | |
| Death, disability and other claims | **$ 9,527** | $ 9,213 |
| Maturity and surrender benefits | **5,058** | 5,403 |
| Annuity payments | **3,244** | 3,164 |
| Policyholder dividends and experience rating refunds | **1,092** | 1,080 |
| Net transfers from segregated funds | **(718)** | (299) |
| Change in insurance contract liabilities | **13,442** | 27,934 |
| Change in investment contract liabilities | **87** | 64 |
| Ceded benefits and expenses | **(5,924)** | (4,918) |
| Change in reinsurance assets (note 8(c)) | **(8,065)** | (1,852) |
| **Net benefits and claims** | **$ 17,743** | $ 39,789 |
| General expenses | **4,531** | 4,061 |
| Investment expenses (note 4) | **1,091** | 1,001 |
| Commissions | **3,932** | 3,813 |
| Interest expense | **967** | 1,249 |
| Net premium taxes | **299** | 257 |
| Goodwill impairment (note 7) | **200** | 665 |
| **Total contract benefits and expenses** | **$ 28,763** | $ 50,835 |
| **Income before income taxes** | **$ 1,169** | $ 148 |
| Income tax recovery (note 6) | **523** | 97 |
| **Net income** | **$ 1,692** | $ 245 |
| **Net income (loss) attributed to:** | | |
| Non-controlling interest in subsidiaries | **$ 59** | $ 27 |
| Participating policyholders | **(103)** | 89 |
| Shareholders | **1,736** | 129 |
| | **$ 1,692** | $ 245 |
| Net income attributed to shareholders | **$ 1,736** | $ 129 |
| Preferred share dividends | **(112)** | (85) |
| **Common shareholders' net income** | **$ 1,624** | $ 44 |
| **EARNINGS PER SHARE** | | |
| **Weighted average number of common shares outstanding** (in millions) | **1,812** | 1,786 |
| **Weighted average number of diluted common shares outstanding** (in millions) | **1,888** | 1,789 |
| **Basic earnings per common share** | **$ 0.90** | $ 0.02 |
| **Diluted earnings per common share** | **$ 0.88** | $ 0.02 |
| **Dividends per common share** | **$ 0.52** | $ 0.52 |

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) | 2012 | 2011 |
|---|---|---|
| **Net income** | **$ 1,692** | $ 245 |
| **Other comprehensive income (loss), net of tax** | | |
| Change in unrealized foreign exchange gains (losses) on: | | |
| Translation of foreign operations | **$ (815)** | $ 577 |
| Net investment hedges | **46** | (30) |
| Change in unrealized gains on available-for-sale financial securities | | |
| Unrealized gains arising during the year | **386** | 303 |
| Reclassification of realized gains and (recoveries) impairments to net income | **(121)** | (536) |
| Changes in unrealized gains (losses) on derivative instruments designated as cash flow hedges | | |
| Unrealized gains (losses) arising during the year | **26** | (52) |
| Reclassification of realized losses to net income | **8** | 8 |
| Share of other comprehensive income (loss) of associates | **(3)** | 7 |
| **Other comprehensive income (loss), net of tax** | **$ (473)** | $ 277 |
| **Total comprehensive income, net of tax** | **$ 1,219** | $ 522 |
| **Total comprehensive income (loss) attributed to:** | | |
| Non-controlling interest | **$ 51** | $ 22 |
| Participating policyholders | **(103)** | 89 |
| Shareholders | **1,271** | 411 |

# Income Taxes Included in Other Comprehensive Income (Loss)

| For the years ended December 31, (Canadian $ in millions) | 2012 | 2011 |
|---|---|---|
| **Income tax expense (recovery)** | | |
| Change in unrealized foreign exchange gains (losses) | | |
| Income tax expense on translation of foreign operations | **$ 3** | $ 5 |
| Income tax (recovery) expense on net investment hedges | **18** | (17) |
| Change in unrealized gains/losses on available-for-sale financial securities | | |
| Income tax expense from unrealized gains arising during the year | **119** | 68 |
| Income tax expense related to reclassification of realized gains and recoveries/impairments to net income | **(8)** | (139) |
| Changes in unrealized gains/losses on derivative instruments designated as cash flow hedges | | |
| Income tax expense (recovery) from unrealized gains/losses arising during the year | **23** | (10) |
| Income tax recovery related to reclassification of realized losses to net income | **4** | 4 |
| Income tax expense (recovery) on share of other comprehensive income (loss) of associates | **(1)** | 4 |
| **Total income tax expense (recovery)** | **$ 158** | $ (85) |

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) | 2012 | 2011 |
|---|---|---|
| **Preferred shares** | | |
| Balance, beginning of year | **$ 1,813** | $ 1,422 |
| Issued during the year (note 14) | **700** | 400 |
| Issuance costs, net of tax | **(16)** | (9) |
| **Balance, end of year** | **$ 2,497** | $ 1,813 |
| **Common shares** | | |
| Balance, beginning of year | **$ 19,560** | $ 19,254 |
| Issued on exercise of stock options and deferred share units | **–** | 2 |
| Issued under dividend reinvestment and share purchase plans | **326** | 304 |
| **Balance, end of year** | **$ 19,886** | $ 19,560 |
| **Contributed surplus** | | |
| Balance, beginning of year | **$ 245** | $ 222 |
| Exercise of stock options and deferred share units | **1** | – |
| Stock option expense | **17** | 23 |
| Acquisition of non-controlling interest | **(6)** | – |
| **Balance, end of year** | **$ 257** | $ 245 |
| **Shareholders' retained earnings** | | |
| Balance, beginning of year | **$ 2,501** | $ 3,393 |
| Net income attributed to shareholders | **1,736** | 129 |
| Preferred share dividends | **(112)** | (85) |
| Common share dividends | **(947)** | (936) |
| **Balance, end of year** | **$ 3,178** | $ 2,501 |
| **Shareholders' accumulated other comprehensive income (loss) ("AOCI")** | | |
| Balance, beginning of year | **$ 96** | $ (186) |
| Change in unrealized foreign exchange gains (losses) on translation of foreign operations | **(768)** | 547 |
| Change in unrealized gains (losses) on available-for-sale financial securities | **265** | (236) |
| Changes in unrealized gains (losses) on derivative instruments designated as cash flow hedges | **41** | (36) |
| Share of other comprehensive income (loss) of associates | **(3)** | 7 |
| **Balance, end of year** | **$ (369)** | $ 96 |
| **Total shareholders' equity, end of year** | **$ 25,449** | $ 24,215 |
| **Participating policyholders' equity** | | |
| Balance, beginning of year | **$ 249** | $ 160 |
| Net income (loss) attributed to participating policyholders | **(103)** | 89 |
| **Balance, end of year** | **$ 146** | $ 249 |
| **Non-controlling interest** | | |
| Balance, beginning of year | **$ 415** | $ 410 |
| Net income attributed to non-controlling interest | **59** | 27 |
| Other comprehensive loss attributed to non-controlling interest | **(8)** | (5) |
| Contributions (distributions), net | **35** | (17) |
| **Balance, end of year** | **$ 501** | $ 415 |
| **Total equity, end of year** | **$ 26,096** | $ 24,879 |

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) | 2012 | 2011 |
|---|---|---|
| **Operating activities** | | |
| Net income | **$ 1,692** | $ 245 |
| Adjustments for non-cash items in net income: | | |
| Increase in insurance contract liabilities | **13,442** | 27,934 |
| Increase in investment contract liabilities | **87** | 64 |
| Increase in reinsurance assets, net of premiums ceded relating to fixed deferred annuity coinsurance (note 8(c)) | **(836)** | (1,852) |
| Amortization of premium/discount on invested assets | **27** | 25 |
| Other amortization | **390** | 345 |
| Net realized and unrealized gains including impairments | **(2,260)** | (16,759) |
| Deferred income tax recovery | **(1,504)** | (210) |
| Stock option expense | **17** | 23 |
| Goodwill impairment | **200** | 665 |
| Net income adjusted for non-cash items | **$ 11,255** | $ 10,480 |
| Changes in policy related and operating receivables and payables | **(175)** | 388 |
| **Cash provided by operating activities** | **$ 11,080** | $ 10,868 |
| **Investing activities** | | |
| Purchases and mortgage advances | **$ (82,373)** | $ (82,830) |
| Disposals and repayments | **71,550** | 71,851 |
| Changes in investment broker net receivables and payables | **(171)** | 222 |
| **Cash used in investing activities** | **$ (10,994)** | $ (10,757) |
| **Financing activities** | | |
| Increase in repurchase agreements and securities sold but not yet purchased | **$ 14** | $ 66 |
| Repayment of long-term debt | **–** | (396) |
| Issue of capital instruments, net | **497** | 547 |
| Repayment of capital instruments | **(1,000)** | (550) |
| Net redemption of investment contract liabilities | **(154)** | (568) |
| Funds (redeemed) borrowed, net | **(11)** | 44 |
| Secured borrowings from securitization transactions | **500** | 250 |
| Changes in bank deposits, net | **880** | 1,603 |
| Shareholder dividends paid in cash | **(733)** | (717) |
| Contributions from (distributions to) non-controlling interest, net | **29** | (17) |
| Common shares issued, net | **–** | 2 |
| Preferred shares issued, net | **684** | 391 |
| **Cash provided by financing activities** | **$ 706** | $ 655 |
| **Cash and short-term securities** | | |
| Increase during the year | **$ 792** | $ 766 |
| Effect of foreign exchange rate changes on cash and short-term securities | **(221)** | 192 |
| Balance, beginning of year | **12,280** | 11,322 |
| **Balance, December 31** | **$ 12,851** | $ 12,280 |
| **Cash and short-term securities** | | |
| **Beginning of year** | | |
| Gross cash and short-term securities | **$ 12,813** | $ 11,849 |
| Net payments in transit, included in other liabilities | **(533)** | (527) |
| **Net cash and short-term securities, January 1** | **$ 12,280** | $ 11,322 |
| **End of year** | | |
| Gross cash and short-term securities | **$ 13,484** | $ 12,813 |
| Net payments in transit, included in other liabilities | **(633)** | (533) |
| **Net cash and short-term securities, December 31** | **$ 12,851** | $ 12,280 |
| **Supplemental disclosures on cash flow information:** | | |
| Interest paid | **$ 1,060** | $ 1,053 |
| Interest received | **$ 8,739** | $ 8,395 |
| Income taxes paid | **$ 469** | $ 255 |

The accompanying notes are an integral part of these consolidated financial statements.

# Notes to Consolidated Financial Statements


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# Notes to Consolidated Financial Statements

(Canadian $ in millions except per share amounts or unless otherwise stated)

## Note 1 Nature of Operations and Significant Accounting Policies

### (a) Reporting entity

Manulife Financial Corporation ("MFC") is a publicly traded life insurance 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 Bermuda reinsurance company. MFC and its subsidiaries (collectively, "Manulife Financial" or the "Company") is a leading Canada-based financial services group with principal operations in Asia, Canada and the United States. Manulife Financial's international network of employees, agents and distribution partners offers financial protection and wealth management products and services to millions of clients as well as asset management services to institutional customers. The Company operates as Manulife Financial in Canada and Asia and primarily 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") and the accounting requirements of the Office of the Superintendent of Financial Institutions, Canada ("OSFI"). None of the accounting requirements of OSFI are exceptions to IFRS. As outlined in (h) below, IFRS does not currently include an insurance contract measurement model and, therefore, as permitted by IFRS 4 "Insurance Contracts", insurance contract liabilities continue to be measured using the Canadian Asset Liability Method ("CALM").

These consolidated financial statements of MFC as at and for the year ended December 31, 2012 were authorized for issue by the Board of Directors on March 15, 2013.

### (b) Basis of preparation

The preparation of the 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, 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 determination of insurance and investment contract liabilities, provisioning for asset impairment, determination of pension and other post-employment benefit obligations and expenses, income taxes and uncertain tax positions, impairment testing of goodwill and intangible assets, fair value of certain financial instruments, derivative and hedge accounting, assessment of relationships with other entities for consolidation and the measurement and disclosure of contingent liabilities. 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) Basis of consolidation

MFC consolidates the financial statements of all subsidiary companies including certain special purpose entities ("SPEs") where appropriate. Subsidiaries are entities controlled by the Company. Control exists when the Company has the power to govern the financial and operating policies of another entity so as to obtain benefits from its activities. In assessing control, significant judgment is applied that considers whether potential voting rights that are presently exercisable and contractual management relationships with the entity, if any, provide the Company with power over the entity's financial and operating policies. Significant judgment is also applied to assess the level of significance of benefits to the Company from the entity's activities. The financial statements of the subsidiaries are included in the Company's consolidated results from the date control is established and are excluded from consolidation from the date control ceases. SPEs are consolidated when the substance of the relationship between the Company and that entity indicates control. Potential indicators of control include the assessment of the Company's exposure to the risks and rewards of the SPE. The assessment of risks and rewards is based on arrangements in place and the assessed risk exposures at inception. The initial assessment is reconsidered at a later date if the Company acquires additional interest in the entity, the contractual arrangements of the entity are amended such that the relative exposure to risks and rewards change, or if the Company acquires or loses control over the key operating and financial decisions of the entity.

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 interest in subsidiaries represents interests of outside parties in the equity of the Company's subsidiaries and is presented within total equity, separate from the equity of MFC's shareholders. Non-controlling interest in the net income and other comprehensive income ("OCI") of MFC's subsidiaries is 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 interest in the subsidiary's equity is presented as liabilities of the Company and non-controlling interest in the subsidiary's income and OCI is recorded as expenses of the Company.

The equity method of accounting is used to account for investments over which the Company has significant influence, whereby the Company records its share of the investee'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 sale of these investments 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 investees are eliminated to the extent of the Company's interest in the investee. These investments are included in other invested assets on the Company's Consolidated Statements of Financial Position.

**(d) Invested assets**

Invested assets that are considered financial instruments are classified as fair-value-through-profit-or-loss ("FVTPL"), loans and receivables, available-for-sale ("AFS") financial assets, or as derivatives, including those designated as hedging instruments in an effective hedge, as appropriate. 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, or if they are designated by management under the fair value option, or if a derivative is embedded in the investment.

Invested assets classified as AFS are non-derivative financial assets that are designated as AFS and are not categorized into any of the other categories described above. They are initially recognized at fair value including direct and incremental transaction costs. They are subsequently held at fair value.

The invested assets held by the Company are accounted for using the methods described below.

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 their fair values. Net payments in transit and overdraft bank balances are included in other liabilities.

Bonds are carried at fair value. Realized gains and losses on sale of bonds and unrealized gains and losses on bonds designated as FVTPL are recognized in investment income immediately. Unrealized gains and losses on AFS bonds 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 bonds are recognized in income when there is objective evidence of impairment. Impairment is considered to have occurred when it is deemed probable that the Company will not be able to collect all amounts due according to contractual terms of the bond.

Stocks are carried at fair value. Realized gains and losses on sale of stocks and unrealized gains and losses on stocks designated as FVTPL are recognized in income immediately. Unrealized gains and losses on AFS stocks are recorded in OCI. Impairment losses on AFS stocks are recognized in income on an individual security basis when there is objective evidence that the cost may not be recovered. 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 classified as loans and are carried at amortized cost less allowance for impairment losses, if any. Realized gains and losses are recorded in income immediately. When mortgages are impaired or when contractual payments are more than 90 days in arrears, contractual interest is no longer accrued. Contractual interest accruals are resumed once the contractual payments are no longer in arrears and are considered current. 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. Impairment is 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 amounts legally required to be paid to the borrowers; or observable market prices for the mortgages, if any.

The Company accounts for current insured 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 on the 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 classified as loans and are carried at amortized cost less allowance for impairments. Realized gains and losses are recorded in income immediately. When private placements are considered impaired, contractual interest is no longer accrued. Contractual interest accruals are resumed once the investment is no longer considered to be impaired. 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. Judgment is applied in the determination of impairment including the timing and amount of future collections.

Policy loans are classified as loans with a carrying value equal to their unpaid balance. Policy loans are fully collateralized by the cash surrender value of the underlying policies.

Bank loans are carried at unpaid principal less allowance for credit losses, if any. When bank loans are impaired or when contractual payments are more than 90 days in arrears, contractual interest is no longer accrued. Contractual interest accruals are resumed once the contractual payments are no longer in arrears and are considered current.

Once established, allowances for impairment of mortgages, private placements and bank loans 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 allowances against the carrying value of impaired assets, the Company considers the impact of the impairments on the investment yields assumed in the calculation of actuarial liabilities.

Interest income is recognized on bonds and loans 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 AFS bonds and loans and receivables measured at amortized cost.

The Company records purchases and sales of invested assets on a trade 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.

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.

Other invested assets include private equity and fixed income investments held primarily in power and infrastructure, oil and gas, and timber and agriculture sectors. Private equity investments are accounted for using the equity method when the Company has the ability to exercise significant influence over the financial and operating policy decision of the investee, or are classified as FVTPL or AFS and carried at fair value when the Company does not have significant influence. Fixed income investments are carried at amortized cost less impairment. Investments in oil and gas exploration and evaluation costs are measured on a “successful efforts” basis.

Other invested assets also include investments in leveraged leases. The carrying value of investments in leveraged leases is calculated by accruing income on the lease receivable and related non-recourse debt using the effective yield method.

**(e) Goodwill and intangible assets**

Goodwill represents the difference between the acquisition cost of the business combination and the Company’s proportionate share of the net identifiable assets acquired and liabilities and certain contingent liabilities assumed. It is initially recorded at cost and subsequently measured at cost less accumulated impairment.

Goodwill is tested for impairment at least annually or 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. If the deficiency exceeds the carrying amount of goodwill, the carrying values of the remaining assets in the CGU or group of CGUs are 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 value-in-use of the group. 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.

Intangible assets consist of assets with indefinite useful lives such as the John Hancock brand name and certain investment management contracts and assets with finite useful lives such as the Company’s distribution networks. The assessment of the indefinite useful life is based on the brand name being protected in the markets where they are sold by trademarks, which are renewable indefinitely. There are no legal, regulatory or contractual provisions that limit the useful life.

An intangible asset with an indefinite useful life is subject to an annual impairment test or more frequently if there is an indication that it is not recoverable.

Finite life intangible assets are amortized over their estimated useful lives, which vary from three to 68 years, and 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.

**(f) Miscellaneous assets**

Miscellaneous assets include defined benefit assets (refer to note 1(n)), deferred acquisition costs and capital assets. 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.

**(g) Segregated funds**

The Company manages a number of segregated funds on behalf of policyholders. The investment returns on these funds are passed directly to the policyholders, although in some cases the Company has provided guarantees of investment performance as described below. Segregated funds net assets and segregated funds net liabilities are presented on separate lines on the Consolidated Statements of Financial Position. Segregated funds net assets are recorded at fair value. The fair value of the segregated funds net liabilities is equal to the fair value of the segregated funds net assets. Income earned from segregated fund management fees is included in other revenue. Investment income earned by the segregated funds and expenses incurred by the segregated funds are not separately presented in the Consolidated Statements of Income and are disclosed in note 23.

The Company provides minimum guarantees on certain individual variable life and annuity contracts. These include minimum death benefit guarantees, minimum withdrawal guarantees, minimum accumulation guarantees and minimum income benefit guarantees. The liabilities associated with these minimum guarantees are recorded within insurance contract liabilities in the general fund.

**(h) Insurance and investment contract liabilities**

**Contract classification**

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 classified as either investment contracts or considered a service contract 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 for the remainder of its term, even if the insurance risk reduces significantly during this period, unless all rights and obligations are extinguished or expire. Investment contracts can be reclassified as insurance contracts if insurance risk subsequently becomes significant.

**Insurance contract liabilities**

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 the Canadian Asset Liability Method ("CALM") as permitted by IFRS 4 "Insurance Contracts". Refer to note 8.

**Investment contract liabilities and deposits**

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, if elected, to ensure consistent measurement and reduce accounting mismatches between the assets supporting the contracts and the liabilities. The liability is derecognized when the contract expires, is discharged or is cancelled.

**Embedded derivatives**

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.

**(i) 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 the reinsurance agreements.

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 buying reinsurance are recognized in income immediately at the date of purchase 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.

**(j) 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 and preferred shares. These financial liabilities are measured at amortized cost, with issuance costs deferred and amortized using the effective interest rate method.

**(k) Income taxes**

The Company provides for income taxes using the liability method of tax allocation. Under this method, 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 result from temporary differences between the carrying values of assets and liabilities and their respective tax bases. Deferred income tax is 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 investments subject to significant influence, 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.

**(l) 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 initially recorded at the functional currency rate prevailing at the date of the transaction.

Assets and liabilities denominated in foreign currencies are retranslated 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 year. Exchange gains and losses are recognized in income with the exception of foreign monetary items that form part of a net investment in a foreign operation 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.

**(m) Stock-based compensation**

The Company provides stock-based compensation to certain employees and directors as described in note 16. The Company uses the fair value method for stock option awards granted on or after January 1, 2002.

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 fair value of MFC's common shares. 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 units resulting from changes in the Company's market value 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 is recognized as compensation expense 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.

When a stock-based compensation award vests in instalments (graded vesting features), each instalment is considered a separate award with the compensation expense amortized accordingly.

Contributions to the Global Share Ownership Plan ("GSOP") are expensed as incurred. Under the GSOP, subject to certain conditions, the Company will match a percentage of the 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.

**(n) Employee future benefits**

The Company maintains a number of pension plans, both defined benefit and defined contribution, and other post-employment plans for eligible employees and agents. These plans include broad-based pension plans for employees, supplemental pension plans for executives, retiree welfare plans and disability welfare plans.

The Company's obligation in respect of defined benefit pension plans and other post-employment plans 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. The discount rate used is based on the yield at the reporting date on high quality corporate bonds that have maturity dates approximating the terms of these 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 any plan assets, any unrecognized past service costs and any unrecognized actuarial gains and losses are then deducted. When this calculation results in an asset, the amount recognized is limited to the sum of any unrecognized past service costs and actuarial losses and the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan.

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 included in general expenses.

The traditional defined benefit pension plans provide pension benefits based on the length of the employees' service and the employees' final average earnings. The other defined benefit pension plans consist of cash balance plans in the United States and Japan that provide benefits based on notional accumulated contributions and interest credits. The cost of all defined benefit pension plans is recognized using the projected benefit method, prorated on service, and estimates of expected return on plan assets and, where applicable, rates of compensation increases and retirement ages of employees. Actuarial gains and losses that exceed 10 per cent of the greater of the defined benefit obligation or the fair value of the plan assets are amortized and recognized in income on a straight-line basis over the estimated average remaining service life of the plan members. The expected return on plan assets is based on the Company's best estimate of the long-term expected rate of return and on the fair value of plan assets.

The defined contribution plans provide pension benefits based on the accumulated contributions and fund earnings. The cost of defined contribution plans is the contribution provided by the Company. Contributions to defined contribution pension plans are recognized in income in the periods during which services are rendered by employees.

The Company's retiree welfare plans provide health, dental and, in some instances, life insurance benefits to qualifying employees upon retirement. The estimated present value of the cost of these benefits is recognized in income over the employees' years of service to their dates of full entitlement. Actuarial gains and losses that exceed 10 per cent of the defined benefit obligation are amortized and recognized in income on a straight-line basis over the estimated average remaining service life of the plan members.

In Canada and the United States, disability welfare plans provide health, dental and in some instances, life insurance benefits to employees who are absent from work due to disability (or other approved leave). The year-over-year change in the defined benefit obligation, including any actuarial gains or losses, is recognized in income in the current year.

When the benefits under the pension plans and other post-employment plans are improved, the portion of the increased benefit relating to past service by employees is recognized in income on a straight-line basis over the average period until the benefits become vested. To the extent that the benefits vest immediately, the increased benefit for past service is immediately recognized in income.

Further details about the characteristics of these plans are included in note 17.

**(o) Derivative and hedging instruments**

The Company uses derivative financial instruments ("derivatives") to manage exposures to foreign currency, interest rate and other market risks arising from on-balance sheet financial instruments, selected anticipated transactions and certain insurance contract liabilities. 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 relationship as to whether hedge accounting can be applied. Where hedge accounting is not applied, changes in the fair value of derivatives are recorded in investment income. Refer to note 5.

**Hedge accounting**

Where the Company has elected to use 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 each 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 the 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 derivative 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.

**Fair value hedges**
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.

**Cash flow hedges**
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 accumulated other comprehensive income ("AOCI") are recognized in income during the same periods as the variability in the cash flows hedged or the hedged forecasted transactions are recognized. The reclassifications from 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 AOCI 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 AOCI 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.

**Net investment hedges**
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.

**(p) 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 (see 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 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 IASB that will impact the Company beginning in 2013 and subsequently. Summaries of each of the most recently issued key accounting standards are presented below:

**(a) IFRS 10 "Consolidated Financial Statements"**
**IFRS 11 "Joint Arrangements"**
**IFRS 12 "Disclosure of Interests in Other Entities"**
**IAS 27 "Separate Financial Statements" (as amended)**
**IAS 28 "Investments in Associates and Joint Ventures" (as amended)**
**"Investment Entities" (Amendments to IFRS 10, IFRS 12 and IAS 27)**

IFRS 10 "Consolidated Financial Statements", IFRS 11 "Joint Arrangements", IFRS 12 "Disclosure of Interests in Other Entities", IAS 27 "Separate Financial Statements" and IAS 28 "Investments in Associates and Joint Ventures" were all issued in May 2011 and are effective for fiscal years beginning on or after January 1, 2013. In October 2012, "Investment Entities" (Amendments to IFRS 10, IFRS 12 and IAS 27) was issued and is effective for fiscal years beginning on or after January 1, 2014.

IFRS 10 replaces the consolidation guidance in IAS 27 "Separate Financial Statements" and Standards Interpretation Committee ("SIC") - 12 "Consolidation – Special Purpose Entities" and introduces a single consolidation model for all entities based on control, irrespective of the nature of the investee. Under IFRS 10, control results from an investor having: 1) power over the investee; 2) exposure or rights to variable returns from its involvement with the investee; and 3) the ability to use its power over the investee to affect the amount of the returns. The adoption of IFRS 10 is expected to result in deconsolidation of certain investments in private equity funds, a timber fund and certain of the Company's financing trusts from the consolidated financial statements. The Company is evaluating the impact of adopting IFRS 10 on its segregated funds. The adoption of IFRS 10 is not expected to have a significant impact on the consolidated financial statements.

IFRS 11 introduces new accounting requirements for joint arrangements, replacing IAS 31 “Interests in Joint Ventures”. The option to apply the proportional consolidation method when accounting for jointly controlled entities is removed. The adoption of IFRS 11 is not expected to have a significant impact on the consolidated financial statements as the Company does not have significant joint venture arrangements.

IFRS 12 requires enhanced disclosures about both consolidated entities and unconsolidated entities in which an entity has involvement. The objective of IFRS 12 is to present information so that financial statement users may evaluate the basis of control, any restrictions on consolidated assets and liabilities, risk exposures arising from involvements with unconsolidated structured entities and non-controlling interest holders’ involvement in the activities of consolidated entities, and of associates and joint ventures. The adoption of IFRS 12 is not expected to have a significant impact on the Company’s consolidated financial statements.

Investment Entities (Amendments to IFRS 10, IFRS 12 and IAS 27) establishes the definition of an investment entity using principles commonly found in the mutual fund industry. The amendments require investment entities to use fair value accounting for all of their investments, including those which they control or have significant influence over. The amendments constitute a scope change for IFRS 10 and, therefore, Investment Entities, as defined, will be exempt from applying consolidation accounting to their investments. The adoption of these amendments is not expected to have a significant impact on the Company’s consolidated financial statements.

**(b) Amendments to IAS 19 “Employee Benefits”**

The amendments to IAS 19 “Employee Benefits” were issued in June 2011. The amendments require the full funded status of the plan to be reflected as the net defined benefit liability or asset in the Consolidated Statements of Financial Position and eliminate the corridor approach for amortization of actuarial gains and losses. This will result in actuarial gains and losses being recognized in full in OCI when they occur rather than being recognized in net income. Past service costs or credits will be immediately recognized in income when a plan is amended. Interest costs and expected return on plan assets under current IAS 19 will be replaced with a net interest amount calculated by applying the discount rate to the net defined benefit liability or asset. Further, these amendments include enhanced disclosures about the characteristics of the pension and other post-employment benefit plans and the risks to which the entity is exposed through participation in these plans. Some of these enhanced disclosures have been incorporated into note 17.

The amendments to IAS 19 are effective for fiscal years beginning on or after January 1, 2013.

The following is a summary of the expected impacts of the adoption of the amendments to IAS 19 in respect of all Company pension and other post-employment plans as at and for the year ended December 31, 2012. These adjustments will be recognized in 2013 by restating 2012 to reflect the impact of the amendments.

| | Pension plans | Other post-employment benefits | Total |
|---|---|---|---|
| Increase (decrease) in defined benefit liability | **$ 872** | **$ (33)** | **$ 839** |
| Increase (decrease) in deferred tax liability | **(277)** | **11** | **(266)** |
| Increase (decrease) in AOCI | **(669)** | **15** | **(654)** |
| Increase (decrease) in 2012 net income | **74** | **(7)** | **67** |

**(c) IFRS 13 “Fair Value Measurement”**

IFRS 13 “Fair Value Measurement” was issued in May 2011 and replaces existing IFRS guidance on fair value measurement with a single standard. IFRS 13 defines fair value, provides guidance on how to determine fair value and requires disclosures about fair value measurements. IFRS 13 does not change the requirements regarding which items should be measured or disclosed at fair value. The standard is effective for fiscal years beginning on or after January 1, 2013. The adoption of IFRS 13 will result in additional financial statement disclosure but is not expected to have a significant impact on the Company’s consolidated financial statements.

**(d) Amendments to IAS 1 “Presentation of Financial Statements”**

An amendment to IAS 1 was issued in June 2011 requiring changes to the presentation of items of other comprehensive income. Under the amendments, presentation of items within other comprehensive income will be separately presented based on whether or not the item will be subsequently reclassified into net income. The amendments are effective for the Company for fiscal years beginning on or after January 1, 2013. The adoption of these amendments is not expected to have a significant impact on the Company’s consolidated financial statements.

**(e) Amendments to IFRS 7 “Financial Instruments: Disclosure”**
**Amendments to IAS 32 “Financial Instruments: Presentation”**

The amendments to IFRS 7 “Offsetting Financial Assets and Financial Liabilities” issued in December 2011 introduce new disclosure requirements for financial instruments relating to their rights of offset and related arrangements under an enforceable master netting agreement or similar arrangements. The amendments to IFRS 7 are effective for fiscal years beginning on or after January 1, 2013. The adoption of this amendment is not expected to have a significant impact on the Company’s consolidated financial statements.

The amendments to IAS 32 “Offsetting Financial Assets and Financial Liabilities” also issued in December 2011 clarify the basis for offsetting financial instruments presented in the statement of financial position. The amendments to IAS 32 are effective for fiscal years beginning on or after January 1, 2014. The adoption of this amendment is not expected to have a significant impact on the Company’s consolidated financial statements.

**(f) IFRS 9 “Financial Instruments”**

IFRS 9 “Financial Instruments” issued in November 2009 and amended in October 2010 is the first phase of a three phase project to replace IAS 39 “Financial Instruments: Recognition and Measurement”. IFRS 9 currently 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, revisions have been made in the accounting for changes in fair value of a financial liability attributable to changes in the credit risk of that liability. The other phases of this project which are currently under development include impairment of financial assets and hedge accounting.

IFRS 9 is effective for fiscal years beginning on or after January 1, 2015. The Company is assessing the impact of IFRS 9 on its consolidated financial statements in conjunction with the completion of the other phases of this project.

## Note 3 Disposition

On July 18, 2011, the Company entered into an agreement with Pacific Life Insurance Company (“Pacific Life”) to sell its life retrocession business. The transaction closed on August 31, 2011. The transaction was structured as reinsurance agreements between Pacific Life and the Company, in which the actuarial liabilities and related operating assets were transferred to Pacific Life. The net cash payment to Pacific Life was $704 in lieu of transferring the invested assets backing the actuarial liabilities. Under the terms of the agreement, the Company transferred the infrastructure (including information technology systems and workforce) required to administer the life retrocession business to Pacific Life.

## Note 4 Invested Assets and Investment Income

### (a) Carrying values and fair values of invested assets

| As at December 31, 2012 | FVTPL | AFS | Other | Total carrying value | Total fair value |
|---|---|---|---|---|---|
| Cash and short-term securities[1] | **$ 531** | **$ 8,364** | **$ 4,589** | **$ 13,484** | **$ 13,484** |
| Bonds[2] | | | | | |
| Canadian government & agency | **12,929** | **3,014** | **–** | **15,943** | **15,943** |
| U.S. government & agency | **18,361** | **8,811** | **–** | **27,172** | **27,172** |
| Other government & agency | **11,750** | **1,866** | **–** | **13,616** | **13,616** |
| Corporate | **54,024** | **4,778** | **–** | **58,802** | **58,802** |
| Mortgage/asset-backed securities | **3,219** | **529** | **–** | **3,748** | **3,748** |
| Stocks[3] | **10,370** | **1,625** | **–** | **11,995** | **11,995** |
| Loans | | | | | |
| Mortgages[4] | **–** | **–** | **35,082** | **35,082** | **37,468** |
| Private placements[5] | **–** | **–** | **20,275** | **20,275** | **22,548** |
| Policy loans[6] | **–** | **–** | **6,793** | **6,793** | **6,793** |
| Bank loans[4] | **–** | **–** | **2,142** | **2,142** | **2,148** |
| Real estate[7] | | | | | |
| Own use property | **–** | **–** | **789** | **789** | **1,368** |
| Investment property | **–** | **–** | **7,724** | **7,724** | **7,724** |
| Other invested assets[8] | **4,832** | **116** | **7,415** | **12,363** | **12,570** |
| **Total invested assets** | **$ 116,016** | **$ 29,103** | **$ 84,809** | **$ 229,928** | **$ 235,379** |

| As at December 31, 2011 | | | | | |
|---|---|---|---|---|---|
| Cash and short-term securities[1] | $ 568 | $ 8,473 | $ 3,772 | $ 12,813 | $ 12,813 |
| Bonds[2] | | | | | |
| Canadian government & agency | 11,030 | 5,517 | – | 16,547 | 16,547 |
| U.S. government & agency | 20,108 | 7,904 | – | 28,012 | 28,012 |
| Other government & agency | 10,318 | 1,844 | – | 12,162 | 12,162 |
| Corporate | 53,091 | 5,017 | – | 58,108 | 58,108 |
| Mortgage/asset-backed securities | 5,135 | 523 | – | 5,658 | 5,658 |
| Stocks[3] | 8,778 | 1,465 | – | 10,243 | 10,243 |
| Loans | | | | | |
| Mortgages[4] | – | – | 35,023 | 35,023 | 37,062 |
| Private placements[5] | – | – | 20,294 | 20,294 | 22,191 |
| Policy loans[6] | – | – | 6,827 | 6,827 | 6,827 |
| Bank loans[4] | – | – | 2,288 | 2,288 | 2,299 |
| Real estate[7] | | | | | |
| Own use property | – | – | 831 | 831 | 1,260 |
| Investment property | – | – | 6,635 | 6,635 | 6,635 |
| Other invested assets[8] | 4,062 | 121 | 6,896 | 11,079 | 11,390 |
| **Total invested assets** | $ 113,090 | $ 30,864 | $ 82,566 | $ 226,520 | $ 231,207 |

(1) Fair values of short-term securities are determined using appropriate prevailing interest rates and credit spreads. This includes short-term securities (i.e., maturities of less than one year at acquisition) amounting to $2,032 (2011 – $2,994) and cash equivalents (i.e., maturities of less than 90 days at acquisition) amounting to $6,863 (2011 – $6,047).

(2) Fair values for bonds, including corporate, U.S. Treasury and municipal securities, are based on quoted market prices when available. When market prices are not available, fair value is generally estimated using discounted cash flow analyses, incorporating current market inputs for similar financial instruments with comparable terms and credit quality (matrix pricing). The significant inputs into these models include, but are not limited to, yield curves, credit risks and spreads, measures of volatility and prepayment rates. Total bonds include securities which are deemed to be short-term securities and cash equivalents of $850 and $132, respectively (2011 – $520 and $6, respectively).

(3) Fair values for stocks are determined with reference to quoted market prices.

(4) Fair values of fixed rate mortgages and bank loans are determined by discounting the expected future cash flows at market interest rates for mortgages with similar remaining terms and credit risks. Fair values for the majority of variable rate mortgages and bank loans are assumed to equal their carrying values since there are no fixed spreads. Where a variable rate mortgage has a fixed spread above the benchmark rate, the mortgages are valued using current market spreads for equivalently rated borrowers.

(5) Fair values of private placements are based on valuation techniques and assumptions which reflect changes in interest rates and changes in the creditworthiness of individual borrowers which have occurred since the investments were originated. The assumptions are based primarily on market observable data. Fair values also reflect any applicable provision for credit loan losses.

(6) Policy loans are carried at amortized cost. As policy loans are fully collateralized by their cash surrender values and can be repaid at any time, their carrying values approximate their fair values.

(7) Fair values of investment property real estate are determined by qualified independent external appraisals using a variety of techniques including discounted cash flows, income capitalization approaches and comparable sales analysis. These appraisals incorporate relevant market evidence, where available. Own use real estate properties are carried on a cost basis with carrying values adjusted for accumulated depreciation and any accumulated impairment losses.

(8) Other invested assets include private equity of $1,761, power and infrastructure of $2,913, oil and gas of $1,355, timber and agriculture sectors of $2,890 as well as investments in leveraged leases of $2,591 (2011 – $1,474, $2,507, $1,292, $2,289 and $2,560, respectively). Fair values of these investments are estimated based on the best information available which is generally not market observable. This may include external appraisals, various valuation techniques used by external managers as well as internal valuations using a variety of techniques including discounted cash flows, earnings multiple of comparable companies and comparable sales analyses. Leveraged leases are carried at values taking into account the present value of future cash flows from the net investment.

**(b) Bonds and stocks classified as FVTPL**

The FVTPL classification was elected for securities backing insurance and investment contract liabilities in order to substantially reduce an accounting mismatch arising from changes in the value of these assets and changes in the value recorded for the related insurance and investment contract liabilities. There would otherwise be a mismatch if the AFS classification was selected because changes in insurance and investment contract liabilities are reflected in net income rather than in OCI.

**(c) Bonds and stocks classified as AFS**

Securities that are designated as AFS are not actively traded 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).

**(d) Other invested assets**

Other invested assets include investments in associates accounted for using the equity method of accounting as follows.

| As at December 31, | 2012 | | 2011 | |
|---|---|---|---|---|
| | Carrying value | % of total | Carrying value | % of total |
| Leases | **$ 2,591** | **81** | $ 2,560 | 76 |
| Private equity | **66** | **2** | 45 | 1 |
| Timber | **182** | **5** | 129 | 4 |
| Agriculture | **88** | **3** | 183 | 5 |
| Affordable housing | **282** | **9** | 336 | 10 |
| Other | **–** | **–** | 132 | 4 |
| **Total** | **$ 3,209** | **100** | $ 3,385 | 100 |

The Company's share of profit from its investments in associates included in income for the year ended December 31, 2012 was $48 (2011 – $54).

During the year ended December 31, 2012, the Company did not receive dividends from any of its investments in associates (2011 – nil).

**(e) Mortgages**

The following table presents the carrying values and fair values of mortgages by property type:

**Mortgage loans by property type**

| As at December 31, | 2012 | | 2011 | |
|---|---|---|---|---|
| | Carrying value | Fair value | Carrying value | Fair value |
| Residential | **$ 18,540** | **$ 18,984** | $ 16,893 | $ 17,266 |
| Office | **5,169** | **5,734** | 5,688 | 6,153 |
| Retail | **5,689** | **6,397** | 5,816 | 6,398 |
| Industrial | **2,394** | **2,622** | 2,888 | 3,120 |
| Other | **3,290** | **3,731** | 3,738 | 4,125 |
| **Total** | **$ 35,082** | **$ 37,468** | $ 35,023 | $ 37,062 |

The carrying value of government-insured mortgages was 31 per cent of the total mortgage portfolio as at December 31, 2012 (2011 – 32 per cent) and the carrying value of privately-insured mortgages was 0.4 per cent of the total mortgage portfolio as at December 31, 2012 (2011 – 0.4 per cent), the majority of these insured mortgages are residential loans as classified in the table above.

## (f) Investment income

| For the year ended December 31, 2012 | FVTPL | AFS | Other[2] | Total | Yields |
|---|---|---|---|---|---|
| Cash and short-term securities | | | | | 0.8% |
| Interest income | $ 17 | $ 78 | $ – | $ 95 | |
| Gains (losses)[1] | 16 | (19) | – | (3) | |
| Bonds | | | | | 6.3% |
| Interest income | 3,961 | 572 | – | 4,533 | 3.8% |
| Gains[1] | 2,869 | 132 | – | 3,001 | 2.5% |
| Impairment loss, net | (41) | (18) | – | (59) | |
| Stocks | | | | | 12.4% |
| Dividend income | 252 | 52 | – | 304 | |
| Gains[1] | 974 | 47 | – | 1,021 | |
| Impairment loss | – | (33) | – | (33) | |
| Loans | | | | | |
| Mortgages | | | | | 5.2% |
| Interest income | – | – | 1,645 | 1,645 | |
| Gains[1] | – | – | 127 | 127 | |
| Provision, net | – | – | (16) | (16) | |
| Private placements | | | | | 7.6% |
| Interest income | – | – | 1,364 | 1,364 | |
| Gains[1] | – | – | 95 | 95 | |
| Recovery, net | – | – | 2 | 2 | |
| Policy loans | – | – | 394 | 394 | 5.8% |
| Bank loans | | | | | 4.2% |
| Interest income | – | – | 93 | 93 | |
| Provision, net | – | – | (1) | (1) | |
| Real estate | | | | | 11.2% |
| Rental income, net of depreciation | – | – | 424 | 424 | |
| Gains[1] | – | – | 430 | 430 | |
| Impairment loss | – | – | (1) | (1) | |
| Derivatives | | | | | n/a |
| Interest income, net | – | – | 544 | 544 | |
| Losses[1] | – | – | (2,973) | (2,973) | |
| Other investments | | | | | 7.7% |
| Interest income | – | – | 34 | 34 | |
| Oil and gas, timber, agriculture and other income | – | – | 492 | 492 | |
| Gains[1] | 177 | 11 | 140 | 328 | |
| (Impairment) recovery, net | – | (1) | 3 | 2 | |
| **Total investment income** | $ 8,225 | $ 821 | $ 2,796 | $ 11,842 | 5.3% |
| Interest income | $ 3,978 | $ 650 | $ 4,074 | $ 8,702 | 3.9% |
| Dividend, rental and other income | 252 | 52 | 916 | 1,220 | 0.5% |
| Impairments and provisions for loan losses (note 10) | (41) | (52) | (13) | (106) | 0.0% |
| Realized gains (losses) on assets backing surplus | 82 | 155 | (1,261) | (1,024) | (0.4)% |
| | $ 4,271 | $ 805 | $ 3,716 | $ 8,792 | |
| Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities | | | | | |
| Bonds | $ 2,868 | $ 15 | $ – | $ 2,883 | 1.3% |
| Stocks | 924 | 2 | – | 926 | 0.4% |
| Loans | – | – | 197 | 197 | 0.1% |
| Real estate | – | – | 420 | 420 | 0.2% |
| Other investments | 162 | (1) | 151 | 312 | 0.1% |
| Derivatives | – | – | (1,688) | (1,688) | (0.7)% |
| | $ 3,954 | $ 16 | $ (920) | $ 3,050 | |
| **Total investment income** | $ 8,225 | $ 821 | $ 2,796 | $ 11,842 | 5.3% |

| For the year ended December 31, 2011 | FVTPL | AFS | Other[2] | Total | Yields |
|---|---|---|---|---|---|
| Cash and short-term securities | | | | | 1.3% |
| Interest income | $ 16 | $ 83 | $ – | $ 99 | |
| Gains[1] | 9 | 44 | – | 53 | |
| Bonds | | | | | 13.1% |
| Interest income | 4,014 | 620 | – | 4,634 | 4.4% |
| Gains[1] | 8,070 | 640 | – | 8,710 | 8.4% |
| Impairment loss, net | (60) | (15) | – | (75) | |
| Stocks | | | | | (2.8)% |
| Dividend income | 210 | 68 | – | 278 | |
| Gains (losses)[1] | (648) | 133 | – | (515) | |
| Impairment loss | – | (61) | – | (61) | |
| Loans | | | | | |
| Mortgages | | | | | 5.1% |
| Interest income | – | – | 1,660 | 1,660 | |
| Gains[1] | – | – | 24 | 24 | |
| Provision, net | – | – | (24) | (24) | |
| Private placements | | | | | 7.2% |
| Interest income | – | – | 1,319 | 1,319 | |
| Gains[1] | – | – | 23 | 23 | |
| Recovery, net | – | – | 28 | 28 | |
| Policy loans | – | – | 391 | 391 | 6.0% |
| Bank loans | | | | | 4.3% |
| Interest income | – | – | 97 | 97 | |
| Real estate | | | | | 10.1% |
| Rental income, net of depreciation | – | – | 358 | 358 | |
| Gains[1] | – | – | 271 | 271 | |
| Impairment loss | – | – | (3) | (3) | |
| Derivatives | | | | | n/a |
| Interest income, net | – | – | 316 | 316 | |
| Gains[1] | – | – | 7,802 | 7,802 | |
| Other investments | | | | | 8.8% |
| Interest income | – | – | 30 | 30 | |
| Oil and gas, timber, agriculture and other income | – | – | 585 | 585 | |
| Gains[1] | 163 | 23 | 48 | 234 | |
| Recovery | – | – | 3 | 3 | |
| **Total investment income** | $ 11,774 | $ 1,535 | $ 12,928 | $ 26,237 | 13.4% |
| Interest income | $ 4,030 | $ 703 | $ 3,813 | $ 8,546 | 4.2% |
| Dividend, rental and other income | 210 | 68 | 943 | 1,221 | 0.6% |
| Impairments and provisions for loan losses (note 10) | (60) | (76) | 4 | (132) | (0.1)% |
| Realized gains (losses) on assets backing surplus | (18) | 799 | (49) | 732 | 0.4% |
| | $ 4,162 | $ 1,494 | $ 4,711 | $ 10,367 | |
| Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities | | | | | |
| Bonds | $ 8,070 | $ 28 | $ – | $ 8,098 | 3.9% |
| Stocks | (648) | 13 | – | (635) | (0.3)% |
| Loans | – | – | 44 | 44 | 0.0% |
| Real estate | – | – | 267 | 267 | 0.1% |
| Other investments | 190 | – | 32 | 222 | 0.1% |
| Derivatives | – | – | 7,874 | 7,874 | 3.8% |
| | $ 7,612 | $ 41 | $ 8,217 | $ 15,870 | |
| **Total investment income** | $ 11,774 | $ 1,535 | $ 12,928 | $ 26,237 | 13.4% |

[1] Gains (losses) include realized and unrealized gains (losses) for securities and derivatives designated as FVTPL and realized gains (losses) for AFS securities, loans and other invested assets.

[2] Other includes interest income, real estate rental income and derivative income as outlined in note 5 and earnings on other investments.

## (g) Investment expenses

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Related to invested assets | **$ 406** | $ 381 |
| Related to segregated, mutual and other funds | **685** | 620 |
| **Total investment expenses** | **$ 1,091** | $ 1,001 |

### (h) Real estate

A summary of the Company's real estate assets by type is as follows.

| As at December 31, | 2012 | 2011 |
|---|---|---|
| Own use property[1] | $ 789 | $ 831 |
| Investment property | 7,724 | 6,635 |
| **Total real estate** | **$ 8,513** | $ 7,466 |

[1] Net of accumulated depreciation of $265 (2011 – $244).

### Investment property

Investment property comprises a number of commercial properties that are leased to third parties. Investment property activity is summarized as follows.

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Balance, January 1 | $ 6,635 | $ 5,531 |
| Acquisitions | 891 | 1,093 |
| Disposals | (74) | (321) |
| Change in fair value | 399 | 241 |
| Impact of changes in foreign exchange rates | (127) | 91 |
| **Balance, December 31** | **$ 7,724** | $ 6,635 |

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

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Rental income from investment property | $ 798 | $ 656 |
| Direct operating expenses that generated rental income | (423) | (341) |
| **Net income from investment property** | **$ 375** | $ 315 |

### (i) Mortgage securitization

The Company securitizes certain insured fixed and variable rate commercial and residential mortgages and Home Equity Lines of Credit ("HELOC") through creation of mortgage-backed securities under the Canadian Mortgage Bond Program ("CMB"), Government of Canada NHA MBS program, as well as to other third party investors. Additionally, the Company mitigates credit risk on certain mortgages through transfers to third party investors. Under IFRS, these transactions remain "on-balance sheet" and are accounted for as secured borrowings, as described in note 1(d).

There are no expected credit losses on the mortgages that have been securitized under the Government of Canada CMB and NHA MBS programs and the HELOC securitization as they are government guaranteed. Benefits received from the transfers include interest spread between the asset and associated liability.

The cash flows received from the assets/mortgages are used to settle the related secured borrowing liability. Receipts of principal are deposited into a trust account for settlement of the liability at the time of maturity. The transferred assets and related cash flows cannot be transferred or otherwise used for other purposes. For the HELOC transactions, receipts of principal are allocated to the Company (the Seller) during the revolving period of the deal and are accumulated for settlement of the liability 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, 2012 | Securitized assets | | | |
|---|---|---|---|---|
| Securitization program | Securitized mortgages | Restricted cash and short-term securities | Total | Secured borrowing liabilities |
| HELOC securitization[1] | $ 1,250 | $ 6 | $ 1,256 | $ 1,248 |
| CMB securitization | 200 | 283 | 483 | 482 |
| NHA MBS securitization[2] | 1 | 8 | 9 | 9 |
| **Total** | **$ 1,451** | **$ 297** | **$ 1,748** | **$ 1,739** |

[1] 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] Under the Government of Canada programs for NHA MBS securitization, cash received on the mortgages is held in a restricted cash account for the payment of the liability under the terms of the program.

| As at December 31, 2011 | Securitized assets | | | |
|---|---|---|---|---|
| Securitization program | Securitized mortgages | Restricted cash and short-term securities | Total | Secured borrowing liabilities |
| HELOC securitization[1] | $ 750 | $ 4 | $ 754 | $ 747 |
| CMB securitization | 391 | 93 | 484 | 481 |
| NHA MBS securitization[2] | 39 | – | 39 | 39 |
| Other | 16 | – | 16 | 16 |
| Total | $ 1,196 | $ 97 | $1,293 | $ 1,283 |

(1) 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) Under the Government of Canada programs for NHA MBS securitization, cash received on the mortgages is held in a restricted cash account for the payment of the liability under the terms of the program.

The fair value of the securitized assets and associated liabilities are as follows.

| As at December 31, 2012 | Securitized assets | | | | |
|---|---|---|---|---|---|
| Securitization program | Securitized mortgages | Restricted cash and short-term securities | Total | Secured borrowing liabilities | Net |
| HELOC securitization | **$ 1,250** | **$ 6** | **$ 1,256** | **$ 1,256** | **$ –** |
| CMB securitization | **205** | **282** | **487** | **491** | **(4)** |
| NHA MBS securitization | **1** | **8** | **9** | **9** | **–** |
| **Total** | **$ 1,456** | **$ 296** | **$ 1,752** | **$ 1,756** | **$ (4)** |

## 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 guarantee dynamic hedging strategy in note 10(a) for an explanation of the Company’s dynamic hedging strategy for its variable annuity product guarantees.

### Hedging relationships

The Company uses derivatives for economic hedging purposes. In certain circumstances, these hedges also meet the requirements for hedge accounting. Hedging relationships eligible for hedge accounting are designated as fair value hedges, cash flow hedges or as 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 fair value hedging relationships**

| For the year ended December 31, 2012 | Hedged items in 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 | **$ (55)** | **$ (36)** | **$ (91)** |
| | Fixed rate liabilities | **(47)** | **48** | **1** |
| Foreign currency swaps | Fixed rate assets | **(1)** | **–** | **(1)** |
| **Total** | | **$ (103)** | **$ 12** | **$ (91)** |

| For the year ended December 31, 2011 | | | | |
|---|---|---|---|---|
| Interest rate swaps | Fixed rate assets | $ (1,688) | $ 1,470 | $ (218) |
| | Fixed rate liabilities | 98 | (97) | 1 |
| Foreign currency swaps | Fixed rate assets | (7) | 9 | 2 |
| | Floating rate liabilities | (1) | 1 | – |
| **Total** | | $ (1,598) | $ 1,383 | $ (215) |

**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 Changes in Equity are shown in the following table.

**Derivatives in cash flow hedging relationships**

| For the year ended December 31, 2012 | Hedged items in 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 | **$ 14** | **$ (12)** | **$ –** |
| Foreign currency swaps | Fixed rate assets | **1** | **–** | **–** |
| Foreign currency forwards | Forecasted expenses | **4** | **–** | **–** |
| Total return swaps | Stock-based compensation | **34** | **–** | **–** |
| **Total** | | **$ 53** | **$ (12)** | **$ –** |

| For the year ended December 31, 2011 | | | | |
|---|---|---|---|---|
| Interest rate swaps | Forecasted liabilities | $ (12) | $ (12) | $ – |
| Foreign currency swaps | Fixed rate assets | (1) | – | 1 |
| Foreign currency forwards | Forecasted expenses | (24) | – | – |
| Total return swaps | Stock-based compensation | (24) | – | – |
| **Total** | | $ (61) | $ (12) | $ 1 |

The Company anticipates that net losses of approximately $22 will be reclassified from AOCI to net income within the next twelve months. The maximum time frame for which variable cash flows are hedged is 29 years.

**Hedges of net investments in net 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 net foreign operations.

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

**Hedging instruments in net investment hedging relationships**

| For the year ended December 31, 2012 | Gains (losses) deferred in AOCI on derivatives | Gains (losses) reclassified from AOCI into investment income | Ineffectiveness recognized in investment income |
|---|---|---|---|
| Currency swaps and interest rate swaps | **$ 55** | **$ –** | **$ –** |
| Non-functional currency denominated debt | **24** | **–** | **–** |
| **Total** | **$ 79** | **$ –** | **$ –** |
| **For the year ended December 31, 2011** | | | |
| Currency swaps and interest rate swaps | $ (69) | $ – | $ – |
| Non-functional currency denominated debt | (25) | – | – |
| **Total** | $ (94) | $ – | $ – |

**Derivatives not designated as hedging instruments**

Derivatives used in portfolios supporting insurance contract liabilities are generally not designated as hedging instruments 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 in non-hedging relationships on the Consolidated Statements of Income are shown in the following table.

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| **Non-hedging relationships** | | |
| Investment income (loss) | | |
| Interest rate swaps | **$ 62** | $ 8,673 |
| Credit default swaps | **2** | – |
| Stock futures | **(2,606)** | (216) |
| Currency futures | **(135)** | 75 |
| Interest rate futures | **(100)** | (352) |
| Interest rate options | **(8)** | 1 |
| Total return swaps | **6** | (29) |
| Foreign currency swaps | **(71)** | (108) |
| Foreign currency forwards | **(34)** | (28) |
| **Total investment income (loss) from derivatives in non-hedging relationships** | **$ (2,884)** | $ 8,016 |

**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 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. 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. 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 in note 11. 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 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 (see note 10).

| **Term to maturity**<br>**As at December 31, 2012** | Less than 1 year | 1 to 3 years | 3 to 5 years | Over 5 years | Total |
|---|---|---|---|---|---|
| Derivative assets | **$ 69** | **$ 215** | **$ 396** | **$ 14,027** | **$ 14,707** |
| Derivative liabilities | **73** | **262** | **386** | **6,485** | **7,206** |
| **As at December 31, 2011** | | | | | |
| Derivative assets | $ 67 | $ 198 | $ 469 | $ 14,738 | $ 15,472 |
| Derivative liabilities | 115 | 342 | 387 | 6,783 | 7,627 |

| | Remaining term to maturity (notional amounts) | | | | Fair value | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **As at December 31, 2012** | 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 | | | | | | | | | |
| Swap contracts | **$ 5,745** | **$ 27,774** | **$ 122,476** | **$ 155,995** | **$ 14,791** | **$ (6,915)** | **$ 7,876** | **$ 8,792** | **$ 994** |
| Futures | **6,079** | **–** | **–** | **6,079** | **–** | **–** | **–** | **–** | **–** |
| Options purchased | **105** | **–** | **1,211** | **1,316** | **43** | **–** | **43** | **87** | **10** |
| Subtotal | **$ 11,929** | **$ 27,774** | **$ 123,687** | **$ 163,390** | **$ 14,834** | **$ (6,915)** | **$ 7,919** | **$ 8,879** | **$ 1,004** |
| Foreign exchange | | | | | | | | | |
| Swap contracts | **699** | **1,585** | **5,372** | **7,656** | **351** | **(648)** | **(297)** | **1,252** | **134** |
| Forward contracts | **762** | **36** | **–** | **798** | **10** | **(13)** | **(3)** | **34** | **3** |
| Futures | **5,310** | **–** | **–** | **5,310** | **–** | **–** | **–** | **–** | **–** |
| Credit derivatives | **–** | **264** | **–** | **264** | **7** | **–** | **7** | **–** | **–** |
| Equity contracts | | | | | | | | | |
| OTC contracts | **239** | **98** | **4** | **341** | **14** | **(9)** | **5** | **96** | **10** |
| Futures | **17,482** | **–** | **–** | **17,482** | **–** | **–** | **–** | **–** | **–** |
| Subtotal including accrued interest | **$ 36,421** | **$ 29,757** | **$ 129,063** | **$ 195,241** | **$ 15,216** | **$ (7,585)** | **$ 7,631** | **$ 10,261** | **$ 1,151** |
| Less accrued interest | **–** | **–** | **–** | **–** | **509** | **(379)** | **130** | **–** | **–** |
| **Total** | **$ 36,421** | **$ 29,757** | **$ 129,063** | **$ 195,241** | **$ 14,707** | **$ (7,206)** | **$ 7,501** | **$ 10,261** | **$ 1,151** |
| **As at December 31, 2011** | | | | | | | | | |
| Interest rate contracts | | | | | | | | | |
| Swap contracts | $ 6,301 | $ 22,726 | $ 99,494 | $ 128,521 | $ 15,378 | $ (7,185) | $ 8,193 | $ 8,835 | $ 958 |
| Futures | 8,309 | – | – | 8,309 | – | – | – | – | – |
| Options purchased | 76 | 108 | 158 | 342 | 9 | – | 9 | 16 | 2 |
| Subtotal | $ 14,686 | $ 22,834 | $ 99,652 | $ 137,172 | $ 15,387 | $ (7,185) | $ 8,202 | $ 8,851 | $ 960 |
| Foreign exchange | | | | | | | | | |
| Swap contracts | 561 | 1,884 | 5,169 | 7,614 | 522 | (786) | (264) | 1,516 | 159 |
| Forward contracts | 753 | 70 | – | 823 | 8 | (2) | 6 | 52 | 5 |
| Futures | 5,185 | – | – | 5,185 | – | – | – | – | – |
| Credit derivatives | 7 | 219 | 24 | 250 | 4 | (1) | 3 | – | – |
| Equity contracts | | | | | | | | | |
| OTC contracts | 116 | 67 | 7 | 190 | 3 | (25) | (22) | 72 | 7 |
| Futures | 16,320 | – | – | 16,320 | – | – | – | – | – |
| Subtotal including accrued interest | $ 37,628 | $ 25,074 | $ 104,852 | $ 167,554 | $ 15,924 | $ (7,999) | $ 7,925 | $ 10,491 | $ 1,131 |
| Less accrued interest | – | – | – | – | 452 | (372) | 80 | – | – |
| **Total** | $ 37,628 | $ 25,074 | $ 104,852 | $ 167,554 | $ 15,472 | $ (7,627) | $ 7,845 | $ 10,491 | $ 1,131 |

[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 gross notional amount and the fair value of derivative contracts by the underlying risk exposure for all derivatives in hedging and non-hedging relationships are summarized in the following table.

| As at December 31, | | 2012 | | | 2011 | | |
|---|---|---|---|---|---|---|---|
| | | Notional | Fair value | | Notional | Fair value | |
| **Type of hedge** | Instrument type | amount | Assets | Liabilities | amount | Assets | Liabilities |
| **Qualifying hedging relationships** | | | | | | | |
| Fair value hedges | Interest rate swaps | **$ 7,276** | **$ 110** | **$ 1,352** | $ 8,294 | $ 150 | $ 1,905 |
| | Foreign currency swaps | **69** | **–** | **28** | 71 | – | 28 |
| Cash flow hedges | Interest rate swaps | **80** | **4** | **–** | 119 | – | 8 |
| | Foreign currency swaps | **126** | **–** | **8** | 8 | 1 | – |
| | Forward contracts | **182** | **9** | **–** | 205 | 4 | – |
| | Equity contracts | **77** | **4** | **3** | 48 | 1 | 11 |
| Net investment hedges | Interest rate swaps | **650** | **208** | **–** | 650 | 216 | – |
| | Foreign currency swaps | **810** | **–** | **162** | 810 | – | 225 |
| Total derivatives in hedging relationships | | **$ 9,270** | **$ 335** | **$ 1,553** | $ 10,205 | $ 372 | $ 2,177 |
| **Non-hedging relationships** | | | | | | | |
| | Interest rate swaps | **$ 147,990** | **$ 13,962** | **$ 5,197** | $ 119,458 | $ 14,559 | $ 4,911 |
| | Interest rate futures | **6,079** | **–** | **–** | 8,309 | – | – |
| | Interest rate options | **1,316** | **43** | **–** | 342 | 9 | – |
| | Foreign currency swaps | **6,649** | **348** | **437** | 6,725 | 523 | 523 |
| | Currency rate futures | **5,310** | **–** | **–** | 5,185 | – | – |
| | Forward contracts | **617** | **1** | **13** | 618 | 3 | 2 |
| | Equity contracts | **264** | **11** | **6** | 142 | 2 | 13 |
| | Credit default swaps | **264** | **7** | **–** | 250 | 4 | 1 |
| | Equity futures | **17,482** | **–** | **–** | 16,320 | – | – |
| Total derivatives in non-hedging relationships | | **$ 185,971** | **$ 14,372** | **$ 5,653** | $ 157,349 | $ 15,100 | $ 5,450 |
| **Total derivatives** | | **$ 195,241** | **$ 14,707** | **$ 7,206** | $ 167,554 | $ 15,472 | $ 7,627 |

### 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 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, 2012, reinsurance ceded guaranteed minimum income benefits had a fair value of $1,460 (2011 – $1,682) and reinsurance assumed guaranteed minimum income benefits had a fair value of $121 (2011 – $123). 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 and contain a credit and interest rate risk that is a financial risk embedded in the underlying insurance contract. As at December 31, 2012, these embedded derivatives had a fair value of $146 (2011 – $116).

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

Components of the income tax expense (recovery) are as follows:

Income tax recognized in Consolidated Statement of Income:

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| **Current tax** | | |
| Current year | **$ 1,241** | $ 184 |
| Adjustments to prior year | **(260)** | (71) |
| | **$ 981** | $ 113 |
| **Deferred tax** | | |
| Reversal of temporary differences | **(1,436)** | (210) |
| Effects of changes in tax rates | **(68)** | – |
| **Income tax recovery** | **$ (523)** | $ (97) |

Income tax recognized in Other Comprehensive Income:

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Current income tax expense (recovery) | **$ 38** | $ (57) |
| Deferred income tax expense (recovery) | **120** | (28) |
| **Income tax expense (recovery)** | **$ 158** | $ (85) |

Income tax recognized directly in Equity:

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Current income tax expense (recovery) | **$ 44** | $ 42 |
| Deferred income tax expense (recovery) | **(52)** | (16) |
| **Income tax (recovery) expense** | **$ (8)** | $ 26 |

The effective income tax rate reported in the Consolidated Statements of Income varies from the Canadian tax rate of 26 per cent for the year ended December 31, 2012 (2011 – 28 per cent) for the following reasons:

### Reconciliation of income tax (recovery) expense

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Income before income taxes | **$ 1,169** | $ 148 |
| Income tax expense at Canadian statutory tax rate | **$ 304** | $ 41 |
| Increase (decrease) in income taxes due to: | | |
| Tax-exempt investment income | **(188)** | (166) |
| Differences in tax rate on income not subject to tax in Canada | **(405)** | (164) |
| General business tax credit | **(46)** | (54) |
| Goodwill impairment | **52** | 233 |
| Other adjustment to current tax related to current tax for prior year | **(260)** | (71) |
| Unused tax losses not recognized as deferred tax assets | **47** | 14 |
| Other differences | **(27)** | 70 |
| **Income tax recovery** | **$ (523)** | $ (97) |

As at December 31, 2012, the Company has approximately $1,538 of current tax payable included in other liabilities (2011 – $1,034) and a current tax recoverable of $14 included in other assets (2011 – $14).

## Deferred taxes

### (i) Recognized deferred tax assets and liabilities

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and they relate to the same tax authority on the same taxable entity.

| As at December 31, | 2012 | 2011 |
|---|---|---|
| Deferred tax assets | | |
| Loss carryforwards | **$ 455** | $ 733 |
| Actuarial liabilities | **7,991** | 4,495 |
| Tax credits | **309** | 497 |
| Accrued interest | **416** | 446 |
| **Deferred tax assets** | **$ 9,171** | $ 6,171 |
| Deferred tax liability | | |
| Real estate | **$ (974)** | $ (439) |
| Securities and other investments | **(4,404)** | (3,622) |
| Sale of investments | **(285)** | (323) |
| Intangible assets | **(582)** | (584) |
| Other | **(472)** | (212) |
| **Deferred tax liability** | **$ (6,717)** | $ (5,180) |
| **Net deferred tax asset** | **$ 2,454** | $ 991 |

### (ii) The movement in the net deferred tax asset (liability) was as follows.

**Deferred tax assets and liabilities**

| For the year ended December 31, 2012 | Real estate | Securities and other investments | Sale of investments | Intangible assets | Actuarial liabilities | Loss carry-forwards | Accrued interest | Tax credits | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Balance, January 1 | **$ (439)** | **$ (3,622)** | **$ (323)** | **$ (584)** | **$ 4,495** | **$ 733** | **$ 446** | **$ 497** | **$ (212)** | **$ 991** |
| Acquired in business combinations | **–** | **–** | **–** | **(2)** | **–** | **–** | **–** | **–** | **–** | **(2)** |
| Recognized in net income | **(538)** | **(777)** | **38** | **(6)** | **3,449** | **(239)** | **(20)** | **(176)** | **(227)** | **1,504** |
| Recognized in OCI | **–** | **(55)** | **–** | **–** | **–** | **(18)** | **–** | **–** | **(47)** | **(120)** |
| Recognized in equity | **–** | **–** | **–** | **–** | **45** | **–** | **–** | **–** | **7** | **52** |
| Translation and other | **3** | **50** | **–** | **10** | **2** | **(21)** | **(10)** | **(12)** | **7** | **29** |
| **Balance, December 31** | **$ (974)** | **$ (4,404)** | **$ (285)** | **$ (582)** | **$ 7,991** | **$ 455** | **$ 416** | **$ 309** | **$ (472)** | **$ 2,454** |
| **For the year ended December 31, 2011** | | | | | | | | | | |
| Balance, January 1 | $ (424) | $ (1,681) | $ (373) | $ (580) | $ 1,768 | $ 1,190 | $ 380 | $ 545 | $ (92) | $ 733 |
| Recognized in net income | (10) | (2,000) | 50 | 7 | 2,802 | (516) | 60 | (63) | (120) | 210 |
| Recognized in OCI | – | – | – | – | – | – | – | – | 28 | 28 |
| Recognized in equity | – | – | – | – | 36 | – | – | – | (20) | 16 |
| Translation and other | (5) | 59 | – | (11) | (111) | 59 | 6 | 15 | (8) | 4 |
| **Balance, December 31** | $ (439) | $ (3,622) | $ (323) | $ (584) | $ 4,495 | $ 733 | $ 446 | $ 497 | $ (212) | $ 991 |

The aggregate of deferred tax assets where the Company has suffered losses in either the current or preceding year and where the recognition is dependent on future taxable profits and feasible management actions is $2,190 as at December 31, 2012 (2011 – $1,144). The Company's continuing recognition of these deferred tax assets are based on future taxable profits in the relevant jurisdictions.

As at December 31, 2012, the Company has approximately $2,232 (2011 – $2,806) of tax loss carryforwards available of which $2,209 expire between the years 2013 and 2032 while $23 have no expiry date. Capital loss carryforwards in the amount of $18 (2011 – $5) expire in the year 2016. A tax benefit related to these tax loss carryforwards in the amount of $455 (2011 – $733), has been recognized in deferred income taxes as at December 31, 2012, and a benefit of $166 (2011 – $119) has not been recognized.

As at December 31, 2012, the Company has recognized approximately $309 (2011 – $497) of tax credit carryforwards available which expire between the years 2021 and 2032.

As at December 31, 2012, the aggregate amount of taxable temporary differences associated with investments in subsidiaries for which deferred tax liabilities have not been recognized amounted to $5,298 (2011 – $4,032).

### Tax related contingencies

The Company is an investor in a number of leasing transactions and has established provisions for possible disallowance of the tax treatment and for interest on past due taxes. The Company continues to believe that deductions originally claimed in relation to these arrangements are appropriate. Should the tax attributes of the Company's lease transactions be fully denied, no material impact to the Company's results is expected.

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.

## Note 7 Goodwill and Intangible Assets

Intangible assets include those with definite lives such as distribution networks, fund management contracts, capitalized software and other contractual rights and those with indefinite lives such as the John Hancock brand name and certain fund management contracts. Software intangible assets are amortized on a straight-line basis over their estimated useful lives of three to five years. Distribution networks and other finite life intangible assets are amortized over their estimated useful lives in relation to the associated gross margin from the related business. Indefinite life intangible assets are not amortized but are subject to an impairment test.

The following table outlines the carrying amounts of the goodwill and intangible assets.

| As at December 31, 2012 | Gross carrying amount | Accumulated amortization | Net carrying amount |
|---|---|---|---|
| **Goodwill** | **$ 3,100** | **$ –** | **$ 3,100** |
| **Indefinite life intangible assets** | | | |
| Brand | **$ 597** | **$ –** | **$ 597** |
| Fund management contracts and other | **458** | **–** | **458** |
| | **$ 1,055** | **$ –** | **$ 1,055** |
| **Finite life intangible assets** | | | |
| Distribution networks | **$ 638** | **$ 119** | **$ 519** |
| Software | **1,058** | **755** | **303** |
| Other intangible assets | **229** | **93** | **136** |
| | **$ 1,925** | **$ 967** | **$ 958** |
| **Total intangible assets** | **$ 2,980** | **$ 967** | **$ 2,013** |
| **Total goodwill and intangible assets** | **$ 6,080** | **$ 967** | **$ 5,113** |

| As at December 31, 2011 | | | |
|---|---|---|---|
| **Goodwill** | $ 3,404 | $ – | $ 3,404 |
| **Indefinite life intangible assets** | | | |
| Brand | $ 610 | $ – | $ 610 |
| Fund management contracts and other | 464 | – | 464 |
| | $ 1,074 | $ – | $ 1,074 |
| **Finite life intangible assets** | | | |
| Distribution networks | $ 639 | $ 96 | $ 543 |
| Software | 941 | 678 | 263 |
| Other intangible assets | 245 | 87 | 158 |
| | $ 1,825 | $ 861 | $ 964 |
| **Total intangible assets** | $ 2,899 | $ 861 | $ 2,038 |
| **Total goodwill and intangible assets** | $ 6,303 | $ 861 | $ 5,442 |

In the fourth quarter of 2012, the Company updated its 2013 business plan including in-force and new business embedded values. The Company uses these measures in determining the recoverable amount of its businesses in its annual goodwill impairment testing completed during the fourth quarter.

In the third quarter of 2012, as a result of the persistent low interest rates in Canada, the Company updated its goodwill impairment testing for its Canadian Individual Life CGU. This process indicated that the recoverable value of the Canadian Individual Life CGU was below its carrying value, suggesting that the $355 of goodwill allocated to this CGU might be impaired. The recoverable value was determined as the higher of the estimated fair value less costs to sell or value-in-use, which incorporated the CGU's in-force and new business embedded values using internal forecasts of revenues and expenses. If the carrying value of a CGU's goodwill exceeds its recoverable amount, goodwill is impaired and will be written down by the amount of the deficiency. The testing completed by the Company determined that the goodwill allocated to the Canadian Individual Life CGU was impaired by $200. The $200 non-cash impairment charge has been recorded in the Corporate and Other segment (see note 20) and does not affect the Company's ongoing operations.

In the fourth quarter of 2011, the Company updated its 2012 business plan including in-force and new business embedded values. The economic environment, including the persistent low interest rates, reduced the recoverable amounts of the Company's life insurance businesses, principally in the U.S. In particular, these updates resulted in an impairment of the $665 remaining goodwill allocated to the U.S. Life Insurance business.

The Company has 15 CGUs or groups of CGUs. The carrying value of goodwill for all CGUs with goodwill balances is shown in the table below.

**For the year ended December 31, 2012**

| CGU or Group of CGUs | Balance, January 1 | Goodwill impairment | Effect of changes in foreign exchange rates | Balance, December 31 |
|---|---|---|---|---|
| Asia (excluding Hong Kong and Japan) | **$ 132** | **$ –** | **$ –** | **$ 132** |
| Japan Insurance and Wealth | **463** | **–** | **(60)** | **403** |
| Canadian Individual Life | **355** | **(200)** | **–** | **155** |
| Canadian Affinity Markets | **83** | **–** | **–** | **83** |
| Canadian Wealth (excluding Manulife Bank) | **750** | **–** | **–** | **750** |
| Canadian Group Benefits and Group Retirement Savings | **826** | **–** | **–** | **826** |
| International Group Program | **68** | **–** | **(1)** | **67** |
| U.S. Long-Term Care | **274** | **–** | **(6)** | **268** |
| U.S. Mutual Funds and Retirement Plan Services | **368** | **–** | **(8)** | **360** |
| Corporate and Other | **85** | **–** | **(29)** | **56** |
| **Total** | **$ 3,404** | **$ (200)** | **$ (104)** | **$ 3,100** |

**For the year ended December 31, 2011**

| | | | | |
|---|---|---|---|---|
| Asia (excluding Hong Kong and Japan) | $ 131 | $ – | $ 1 | $ 132 |
| Japan Insurance and Wealth | 430 | – | 33 | 463 |
| Canadian Individual Life | 355 | – | – | 355 |
| Canadian Affinity Markets | 83 | – | – | 83 |
| Canadian Wealth (excluding Manulife Bank) | 750 | – | – | 750 |
| Canadian Group Benefits and Group Retirement Savings | 826 | – | – | 826 |
| International Group Program | 67 | – | 1 | 68 |
| U.S. Life Insurance | 646 | (665) | 19 | – |
| U.S. Long-Term Care | 267 | – | 7 | 274 |
| U.S. Mutual Funds and Retirement Plan Services | 360 | – | 8 | 368 |
| Corporate and Other | 75 | – | 10 | 85 |
| **Total** | $ 3,990 | $ (665) | $ 79 | $ 3,404 |

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

*Valuation techniques*

The recoverable value of each CGU or group of CGUs at December 31, 2012 and 2011 was based on value-in-use for all of the U.S. based CGUs or groups of CGUs and the Canadian Individual Life CGU and fair value less costs to sell for all other CGUs or groups of CGUs.

*(i) Income approach (value-in-use)*

The Company has used an actuarial appraisal method for the purposes of goodwill testing. Under this approach, an 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.

*Significant assumptions*

*Growth*

The assumptions used were based on the Company's internal plan and Canadian actuarial valuation basis. To calculate the embedded value, the Company discounted projected earnings from each in-force contract and valued ten 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 zero per cent to 11 per cent (2011 – zero per cent to 10 per cent).

*Interest rates*
The Company uses a similar methodology for measuring insurance contracts in determining projected expected interest rates based on prevailing market rates at the valuation date.

*Tax rates*
The tax rates applied to the projections reflected intercompany transfer pricing agreements currently in effect which were assumed to be transferable to another market participant and amounted to 26 per cent and 35 per cent (2011 – 26 per cent and 35 per cent) for the Canadian and U.S. 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*
The discount rate assumed in determining the value-in-use, for applicable CGUs or groups of CGUs for the Canadian and U.S. jurisdictions, was 10 per cent on an after-tax basis or 14 per cent on a pre-tax basis (2011 – 10 per cent on an after-tax basis and 14 per cent on a pre-tax basis).

*(ii) Fair values*
Where applicable, the Company determined the fair value of the CGU or group of CGUs using an earnings-based approach which incorporated the 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 to 16 (2011 – 10 to 14).

The key assumptions described above may change as economic and market conditions change.

Going forward, the goodwill testing for 2013 will be based on the economic conditions that exist in 2013, which may result in further lowering the margin of recoverable value in excess of carrying value attributable to the Company's Canadian Individual Life CGU. Any material change in the discount rates, cash flow projections used in the determination of embedded values or reductions in market-based earnings multiples may result in further impairment charges, which could be material.

**Finite life intangible assets**
The estimated useful lives of the finite life intangible assets range from three to 68 years. Amortization expense was $142 for the year ended December 31, 2012 (2011 – $121).

## 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, | 2012 | 2011 |
|---|---|---|
| Gross actuarial liabilities | **$ 190,589** | $ 180,973 |
| Gross benefits payable and provision for unreported claims | **2,412** | 2,684 |
| Gross policyholder amounts on deposit | **6,587** | 6,709 |
| Gross insurance contract liabilities | **$ 199,588** | $ 190,366 |
| Impact of reinsurance assets | **(18,681)** | (10,728) |
| **Net insurance contract liabilities** | **$ 180,907** | $ 179,638 |

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 insurance contract liabilities under IFRS retain the existing valuation methodology that was used under prior Canadian generally accepted accounting principles. Net actuarial liabilities are determined using CALM, as required by the Canadian Institute of Actuaries. Liabilities are set equal to the statement of financial position value of the assets required to support them.

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

Each assumption is adjusted by a margin for adverse deviation. For fixed income returns, this margin is established by scenario testing that is generally done on a deterministic basis, testing a range of prescribed and company-developed scenarios. For minimum guarantees on segregated fund products, the margin for adverse deviation for investment returns is done stochastically. For other assumptions, this margin is established by directly adjusting the best estimate assumption.

Cash flows used in the net actuarial valuation adjust the gross policy cash flows to reflect the projected cash flows from ceded reinsurance. The cash flow impact of ceded reinsurance varies depending upon the amount of reinsurance, the structure of the reinsurance treaties, the expected economic benefit from the treaty cash flows and the impact of margins for adverse deviation. The gross actuarial liabilities are determined by discounting the 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 first renewal date at or after the balance sheet date where the Company can exercise discretion in renewing its contractual obligations or terms of those obligations. Where the projection period is less than the policy lifetime, actuarial 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, 2012 | Individual insurance: Participating | Individual insurance: 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 | **$ 17,433** | **$ 6,502** | **$ 3,608** | **$ 1,621** | **$ 29,164** | **$ 325** | **$ 29,489** |
| Canadian Division | **9,246** | **17,549** | **15,327** | **8,487** | **50,609** | **1,697** | **52,306** |
| U.S. Division | **19,536** | **31,070** | **24,972** | **25,722** | **101,300** | **15,344** | **116,644** |
| Corporate and Other | **–** | **5** | **88** | **(259)** | **(166)** | **1,315** | **1,149** |
| **Total, net of reinsurance ceded** | **$ 46,215** | **$ 55,126** | **$ 43,995** | **$ 35,571** | **$ 180,907** | **$ 18,681** | **$ 199,588** |
| **Total reinsurance ceded** | **386** | **8,555** | **8,653** | **1,087** | **18,681** | | |
| **Total, gross of reinsurance ceded** | **$ 46,601** | **$ 63,681** | **$ 52,648** | **$ 36,658** | **$ 199,588** | | |

| As at December 31, 2011 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Asia Division | $ 16,033 | $ 5,270 | $ 3,957 | $ 1,473 | $ 26,733 | $ 306 | $ 27,039 |
| Canadian Division | 8,497 | 15,112 | 15,951 | 7,584 | 47,144 | 1,185 | 48,329 |
| U.S. Division | 20,257 | 28,306 | 32,797 | 24,071 | 105,431 | 7,974 | 113,405 |
| Corporate and Other | – | 178 | 97 | 55 | 330 | 1,263 | 1,593 |
| **Total, net of reinsurance ceded** | $ 44,787 | $ 48,866 | $ 52,802 | $ 33,183 | $ 179,638 | $ 10,728 | $ 190,366 |
| **Total reinsurance ceded** | (5) | 7,445 | 2,052 | 1,236 | 10,728 | | |
| **Total, gross of reinsurance ceded** | $ 44,782 | $ 56,311 | $ 54,854 | $ 34,419 | $ 190,366 | | |

[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, 2012, $27,950 (2011 – $27,739) of both assets and insurance contract liabilities related to these closed blocks of participating policies.

### (c) Fixed deferred annuity coinsurance transactions

On June 29, 2012, the Company entered into a coinsurance agreement to reinsure 89 per cent of its book value fixed deferred annuity business from John Hancock U.S.A. with an effective date of April 1, 2012. Under the terms of the agreement, the Company will maintain responsibility for servicing of the policies and some of the assets and has retained the remaining exposure. On September 25, 2012, the Company entered into a coinsurance agreement to reinsure 90 per cent of its fixed deferred annuity business from John Hancock Life Insurance Company of New York with an effective date of July 1, 2012. Under the terms of the agreement, the Company will maintain responsibility for servicing of the policies and has retained the remaining exposure.

The transactions were structured such that the Company ceded the actuarial liabilities and transferred related invested assets which included US$7,178 in cash and other invested assets backing the actuarial liabilities as premiums paid to the reinsurers in exchange for assuming these liabilities. Due to the significant size of these transactions, the premiums ceded are shown separately in the Consolidated Statements of Income. With these transactions, the Company has now reinsured approximately 89 per cent of its book value fixed deferred annuity business. Reinsurance assets representing the benefits of these reinsurance arrangements are not offset against the related insurance contract liabilities and are presented on a gross basis on the Consolidated Statements of Financial Position.

**(d) 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 equity 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 are not judged by the Company to be other than temporary would have a limited impact on the Company's net income wherever there is an effective matching of the assets and liabilities, as these changes would be substantially offset by corresponding changes in the value of the actuarial liabilities. The fair value of assets backing net insurance contract liabilities as at December 31, 2012, excluding reinsurance assets, was estimated at $184,943 (2011 – $183,126).

The fair value of assets backing capital and other liabilities as at December 31, 2012 was estimated at $306,563 (2011 – $283,539).

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

| | Individual insurance | | | | | | |
|---|---|---|---|---|---|---|---|
| **As at December 31, 2012** | Participating | Non-participating | Annuities and pensions | Other insurance contract liabilities[1] | Other liabilities[2] | Capital[3] | Total |
| **Assets** | | | | | | | |
| Bonds | **$ 25,671** | **$ 29,356** | **$ 24,141** | **$ 17,333** | **$ 5,742** | **$ 17,038** | **$ 119,281** |
| Stocks | **5,278** | **3,445** | **208** | **301** | **471** | **2,292** | **11,995** |
| Mortgages | **4,107** | **4,566** | **6,347** | **3,642** | **16,058** | **362** | **35,082** |
| Private placements | **3,133** | **6,022** | **6,196** | **3,656** | **816** | **452** | **20,275** |
| Real estate | **2,166** | **3,321** | **775** | **1,880** | **229** | **142** | **8,513** |
| Other | **5,860** | **8,416** | **6,328** | **8,759** | **252,186** | **9,361** | **290,910** |
| **Total** | **$ 46,215** | **$ 55,126** | **$ 43,995** | **$ 35,571** | **$ 275,502** | **$ 29,647** | **$ 486,056** |
| **As at December 31, 2011** | | | | | | | |
| **Assets** | | | | | | | |
| Bonds | $ 25,242 | $ 25,996 | $ 29,230 | $ 15,775 | $ 4,861 | $ 19,383 | $ 120,487 |
| Stocks | 4,433 | 2,844 | 204 | 466 | 386 | 1,910 | 10,243 |
| Mortgages | 4,430 | 4,252 | 7,707 | 3,803 | 14,192 | 639 | 35,023 |
| Private placements | 2,882 | 5,351 | 7,651 | 3,371 | 514 | 525 | 20,294 |
| Real estate | 2,088 | 2,824 | 803 | 1,526 | 101 | 124 | 7,466 |
| Other | 5,712 | 7,599 | 7,207 | 8,242 | 233,303 | 6,401 | 268,464 |
| **Total** | $ 44,787 | $ 48,866 | $ 52,802 | $ 33,183 | $ 253,357 | $ 28,982 | $ 461,977 |

(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 15.

**(e) 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. In conjunction with prudent business practices to manage both business and investment risks, the selection and monitoring of appropriate assumptions are designed to minimize the Company's exposure to measurement uncertainty.

**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 the 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.<br><br>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 industry past and emerging experience and are established for each type of morbidity risk and geographic market. | 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.<br><br>Mortality is monitored monthly and the overall 2012 experience was favourable (2011 – favourable) when compared to the Company's assumptions. Morbidity is also monitored monthly and the overall 2012 experience was unfavourable (2011 – unfavourable) when compared to the Company's assumptions, primarily related to poor experience for Long-Term Care. |
| **Investment returns** | The Company segments assets to support liabilities by business segment and geographic market and establishes 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 on these assets for future years. The 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.<br><br>Investment return assumptions include expected future asset credit losses on fixed income investments. Credit losses are projected based on past Company and industry experience as well as specific reviews of the current investment portfolio.<br><br>Investment return assumptions for each asset class 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. | The Company's policy of closely matching the cash flows of assets 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.<br><br>In 2012, the movement in interest rates adversely (2011 – adversely) impacted the Company's net income. All rates contributed to this adverse impact, including reductions in corporate spreads and risk free rates, and increases in swap spreads.<br><br>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, the 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.<br><br>In 2012, credit loss experience on bonds and mortgages was favourable (2011 – favourable) when compared to the Company's assumptions.<br><br>Stocks, 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. Stocks, 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 pensions businesses and for long-dated insurance obligations on contracts where the investment return risk is borne by the Company.<br><br>In 2012, investment experience on alternative long-duration assets backing policyholder liabilities was unfavourable (2011 – unfavourable) due to reappraisal losses on oil and gas properties and private equities which were largely offset by reappraisal gains on real estate and timber properties. In 2012, asset returns including origination exceeded valuation requirements. |

| Nature of factor and assumption methodology | | Risk management |
|---|---|---|
| **Investment returns (continued)** | | In 2012, investment experience for segregated fund businesses from changes in the market value of funds under management was favourable (2011 – unfavourable) with all markets showing increases in 2012.<br>In 2012, investment expense experience was favourable (2011 – favourable) when compared to the Company's assumptions. |
| **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.<br>In aggregate, 2012 policyholder behaviour experience was unfavourable (2011 – 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.<br>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.<br>Maintenance expenses for 2012 were unfavourable (2011 – unfavourable) when compared to the Company's assumptions used in the computation of actuarial liabilities.<br>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.<br>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 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 (note 8(i)). Where changes are made to assumptions (see section i), the full impact is recognized in income immediately.

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

The sensitivity of after-tax income 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.

Most participating business is excluded from this analysis because of the ability to pass both favourable and adverse experience to the policyholders through the participating dividend adjustment.

**Sensitivity of insurance contract liabilities to changes in non-economic assumptions**

| | Decrease in after-tax income | |
|---|---|---|
| **As at December 31,** | **2012** | 2011 |
| **Policy related assumptions** | | |
| 2% adverse change in future mortality rates [1],[3] | | |
| Products where an increase in rates increases insurance contract liabilities | **$ (200)** | $ (200) |
| Products where a decrease in rates increases insurance contract liabilities | **(300)** | (300) |
| 5% adverse change in future morbidity rates [2],[3] | **(1,400)** | (1,200) |
| 10% adverse change in future termination rates [3] | **(1,400)** | (1,200) |
| 5% increase in future expense levels | **(400)** | (300) |

[1] 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.

[2] 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.

[3] 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.

### (g) 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.

Under Canadian IFRS reporting new business profits are capitalized at issue of a policy decreasing the income that would be recognized at inception of the policy and releasing it into future earnings as the policy is released from risk. Minimum requirements are prescribed by the Canadian Institute of Actuaries for determining margins related to interest rate risk. 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 Standards of Practice.

Each margin is reviewed annually for continued appropriateness.

### (h) 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, 2012 | Net actuarial liabilities | Other insurance contract liabilities[1] | Net insurance contract liabilities | Reinsurance asset | Gross insurance contract liabilities |
|---|---|---|---|---|---|
| Balance, January 1 | **$ 170,849** | **$ 8,789** | **$ 179,638** | **$ 10,728** | **$ 190,366** |
| New policies | **2,550** | **–** | **2,550** | **322** | **2,872** |
| Normal in-force movement | **97** | **(230)** | **(133)** | **7,509** | **7,376** |
| Changes in methods and assumptions | **2,653** | **33** | **2,686** | **365** | **3,051** |
| Impact of changes in foreign exchange rates | **(3,592)** | **(242)** | **(3,834)** | **(243)** | **(4,077)** |
| **Balance, December 31** | **$ 172,557** | **$ 8,350** | **$ 180,907** | **$ 18,681** | **$ 199,588** |

| For the year ended December 31, 2011 | | | | | |
|---|---|---|---|---|---|
| Balance, January 1 | $ 142,446 | $ 8,034 | $ 150,480 | $ 7,832 | $ 158,312 |
| New policies | 2,350 | – | 2,350 | 192 | 2,542 |
| Normal in-force movement | 21,284 | 533 | 21,817 | 2,626 | 24,443 |
| Changes in methods and assumptions | 1,545 | 3 | 1,548 | (91) | 1,457 |
| Impact of changes in foreign exchange rates | 3,224 | 219 | 3,443 | 169 | 3,612 |
| **Balance, December 31** | $ 170,849 | $ 8,789 | $ 179,638 | $ 10,728 | $ 190,366 |

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

### (i) Actuarial methods and assumptions

A comprehensive review of valuation assumptions and methods is performed annually and is designed to minimize the Company's exposure to uncertainty by managing both asset-related and liability-related risks. 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.

#### 2012

In 2012, the review of actuarial assumptions and methods resulted in an increase in policy liabilities of $2,686, net of reinsurance. The impact of the changes in actuarial assumptions and methods increased reinsurance assets by $365. Net of the impacts on participating surplus and non-controlling interests, shareholders' income decreased by $1,758 post-tax. The impact on net income included $677 related to updates to the ultimate reinvestment rate.

The following table represents the impact of the 2012 changes in actuarial assumptions and models on policy liabilities and net income attributed to shareholders by the three main drivers.

**For the year ended December 31, 2012**

| | To policy liabilities | To net income attributed to shareholders |
|---|---|---|
| Assumption | Increase (decrease) | Increase (decrease) |
| **Related to updates to actuarial standards** | | |
| Segregated fund equity calibration | **$ 317** | **$ (244)** |
| **Largely related to current macro-economic environment** | | |
| Updates to ultimate reinvestment rate | **$ 983** | **$ (677)** |
| U.S. Variable Annuity GMWB withdrawal and lapse assumptions | **722** | **(469)** |
| Stochastic bond parameter update | **595** | **(427)** |
| Life insurance lapse updates | **296** | **(194)** |
| Other interest rate related impacts | **258** | **(30)** |
| | **$ 2,854** | **$ (1,797)** |
| **Other annual updates** | | |
| Mortality and morbidity updates | **$ (196)** | **$ 166** |
| Expense updates | **(206)** | **142** |
| Other lapse updates | **144** | **(134)** |
| Alternative asset modeling refinements and assumption updates | **215** | **(178)** |
| Refinement to corporate spread modeling | **(249)** | **167** |
| Update to Variable Annuity hedge business margin | **(179)** | **126** |
| Other | **(14)** | **(6)** |
| | **$ (485)** | **$ 283** |
| **Net impact** | **$ 2,686** | **$ (1,758)** |

**Related to updates to actuarial standards**
Updates to actuarial standards related to equity calibration for stochastic models used to value segregated fund liabilities resulted in an increase to policy liabilities of $317.

**Related to changes in the macro-economic environment**
Ultimate reinvestment rates were updated to reflect the formulaic impact of the low interest rate environment, and the introduction of a new reinvestment scenario for Canadian liabilities resulting in an increase of $983 to policy liabilities. Withdrawal and utilization assumptions were strengthened for U.S. Variable Annuity Guaranteed Minimum Withdrawal Benefit business resulting in an increase of $722 to policy liabilities. Updated bond parameters used in the stochastic valuation of segregated fund business caused an increase in policy liabilities of $595. Lapse rates for certain U.S. Universal Life products with interest guarantees and for certain Japan term insurance business were updated to reflect emerging policyholder experience resulting in an increase of $296 to policy liabilities. Policy liabilities for certain participating business in Canada were increased $258 for updated interest rates.

**Other annual updates**
Updates to other liability related assumptions were the result of the annual review or monitoring of assumptions and resulted in a $485 reduction in policy liabilities. Policy liability reductions of $196 were the result of reductions from morbidity assumptions in Japan and refinement of mortality assumptions in certain U.S. life insurance segments, offset by strengthening of policy liabilities from mortality assumptions for Canadian annuity and segregated fund business. A $206 reduction in policy liabilities was related to favourable investment expenses, partly offset by an update to letter of credit costs in the U.S. Updates to lapse assumptions for Japan and Canadian insurance products increased policy liabilities by $144. A $249 reduction in policy liabilities resulted from the beneficial impact of updates to the modeling of corporate spreads. A $215 increase in policy liabilities resulted from refinements to the modeling of, and updates to return assumptions, for alternative long-duration asset cash. A $179 reduction in policy liabilities resulted from updates to valuation margins for segregated fund business that is dynamically hedged. A $14 reduction in policy liabilities related to refinements in policyholder cash flows included a charge for the provisioning of the anticipated future earnings impact from valuation system conversions, largely offset by the realized benefits from modeling of future tax timing differences.

**2011**
The 2011 review of the actuarial methods and assumptions underlying policy liabilities produced a net increase in policy liabilities of $1,515. Net of the impacts on participating surplus and non-controlling interests, this resulted in a decrease in 2011 shareholders' post-tax income of $1,188.

**For the year ended December 31, 2011**

| | To policy liabilities | To net income attributed to shareholders |
|---|---|---|
| Assumption | Increase (decrease) | Increase (decrease) |
| **Related to updates to actuarial standards** | | |
| Future mortality improvements | $ (180) | $ 97 |
| **Largely related to current macro-economic environment** | | |
| Ultimate reinvestment rate | $ 612 | $ (437) |
| Variable annuity lapse update | 571 | (409) |
| Life insurance lapse updates | 137 | (90) |
| Other | (27) | 41 |
| | $ 1,293 | $ (895) |
| **Other annual updates** | | |
| Mortality updates – U.S. Life older ages | $ 754 | $ (475) |
| Other mortality and morbidity updates | (986) | 636 |
| Expense updates | 141 | (85) |
| Other lapse updates | (159) | 97 |
| GMWB commutation rates, alternative asset assumptions | 385 | (327) |
| Other | 267 | (236) |
| | $ 402 | $ (390) |
| **Net impact** | $ 1,515 | $ (1,188) |

**Related to updates to actuarial standards**
Updates to actuarial standards permitted mortality and morbidity improvements to be reflected for non-annuity business, resulting in a reduction of $180 in policy liabilities.

**Largely related to current macro-economic environment**
Actuarial assumption changes driven by current macro-economic forces resulted in an increase in policy liabilities of $1,293. Most notable was update to the ultimate reinvestment rate assumption of $612. Additional updates in this category included updates to lapses for certain variable annuity and segregated fund products of $571, and lapse and premium persistency assumptions for certain accumulation insurance products of $137.

**Other annual updates**
The impact of other updates to methods and assumptions resulted in an increase to policy liabilities of $402. Mortality and morbidity updates were a decrease in policy liabilities of $232, with releases from most mortality assumption updates of $986 largely offset by policy liability increases from updates to U.S. Life older age mortality of $754. Expense updates resulted in an increase to policy liabilities of $141 made up primarily of updates to maintenance expenses for U.S. Life and updates to projections of anticipated future costs of letters of credit. Updates to certain assumptions related to alternative long-duration assets and to commutation rates for guaranteed minimum withdrawal business in Canada resulted in an increase in policy liabilities of $385. Lapse assumptions were updated for certain insurance businesses, with a corresponding policy liability reduction of $159. Increases in policy liabilities of $267 included the impact of updates to the modeling of certain payout annuities and refinements to the modeling of guaranteed minimum withdrawal benefit amounts, partly offset by the impact of system conversions in the U.S.

### (j) Insurance contracts contractual obligations
Insurance contracts give rise to obligations fixed by agreement. As at December 31, 2012, 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] | **$ 6,415** | **$ 7,859** | **$ 10,017** | **$ 454,739** | **$ 479,030** |

[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.

## 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.

**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, Japan, China, Taiwan and U.S. Fixed Products. The carrying value of investment contract liabilities measured at fair value are reflected below.

| As at December 31, | 2012 | 2011 |
|---|---|---|
| Asia | **$ 649** | $ 743 |
| United States | **–** | 5 |
| **Investment contract liabilities** | **$ 649** | $ 748 |

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

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Balance, January 1 | **$ 748** | $ 817 |
| New policies | **4** | 4 |
| Changes in market conditions | **–** | – |
| Changes in methods and assumptions | **–** | (1) |
| Redemptions, surrenders and maturities | **(87)** | (91) |
| Impact of changes in foreign exchange rates | **(16)** | 19 |
| **Balance, December 31** | **$ 649** | $ 748 |

For the year ended December 31, 2012, the net gain relating to investment contract liabilities at fair value was nil (2011 – gain of $1).

**Investment contract liabilities measured at amortized cost**
Investment contract liabilities measured at amortized cost comprise medium term notes sold in the U.S. and several annuity certain products sold in Canada and the U.S. Annuity certain 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.

| As at December 31, | 2012 Amortized cost | 2012 Fair value | 2011 Amortized cost | 2011 Fair value |
|---|---|---|---|---|
| U.S. medium term notes | **$ 386** | **$ 415** | $ 463 | $ 495 |
| U.S. annuity certain products | **1,140** | **1,218** | 1,073 | 1,005 |
| Canadian annuity certain products | **249** | **276** | 256 | 277 |
| **Investment contract liabilities** | **$ 1,775** | **$ 1,909** | $ 1,792 | $ 1,777 |

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

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Balance, January 1 | **$ 1,792** | $ 2,173 |
| New policy deposits | **155** | 269 |
| Interest | **84** | 105 |
| Withdrawals | **(225)** | (793) |
| Fees | **1** | 2 |
| Other | **1** | 10 |
| Impact of changes in foreign exchange rates | **(33)** | 26 |
| **Balance, December 31** | **$ 1,775** | $ 1,792 |

For the year ended December 31, 2012, the net loss relating to investment contracts measured at amortized cost was $86 (2011 – $117).

Medium term notes offer a specified guaranteed fixed or floating rate of return based on external market indices and are comprised of the following contractual terms.

| As at December 31 | Issue date | Maturity date | 2012 Carrying value | 2011 Carrying value |
|---|---|---|---|---|
| EURIBOR3 + 35bps EUR Medium term notes | June 26, 2002 | June 25, 2012 | **$ –** | $ 68 |
| 5.000% USD Medium term notes | September 24, 2003 | September 30, 2013 | **50** | 51 |
| 4.670% HKD Medium term notes | March 16, 2004 | March 17, 2014 | **32** | 33 |
| 5.250% USD Medium term notes | February 18, 2003 | February 25, 2015 | **304** | 311 |
| **Total carrying value** | | | **$ 386** | $ 463 |
| **Fair value** | | | **$ 415** | $ 495 |

The carrying value of the medium term notes is amortized at the effective interest rates which exactly discount the contractual cash flows to the net carrying amount of the liabilities at the date of issue.

The fair value of the medium term notes is determined using a discounting cash flow approach based on current market interest rates adjusted for the Company's own credit standing.

The carrying value of annuity certain 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 annuity certain 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.

**Investment contracts contractual obligations**

Investment contracts give rise to obligations fixed by agreement. As at December 31, 2012, 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] | **$ 280** | **$ 749** | **$ 358** | **$ 3,080** | **$ 4,467** |

[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

Manulife Financial is a financial institution offering insurance, wealth and asset management products and other financial services, which subjects the Company to a broad range of risks. The Company manages these risks within an enterprise-wide risk management framework. The Company's goal in managing risk is to strategically optimize risk taking and risk management to support long-term

revenue, earnings and capital growth. The Company seeks to achieve this by capitalizing on business opportunities and strategies with appropriate risk/return profiles; ensuring sufficient management expertise is in place to effectively execute strategies, and to identify, understand and manage underlying inherent risks; ensuring strategies and activities align with the Company's corporate and ethical standards and operational capabilities; pursuing opportunities and risks that enhance diversification; and in making all risk taking decisions with analyses of inherent risks, risk controls and mitigations, and risk/return trade-off.

### (a) Market risk

***Market risk management strategy overview***

The Company's overall strategy to manage its market risks incorporates several component strategies, each targeted to manage one or more of the market risks arising from the Company's businesses. At an enterprise level, these strategies are designed to manage the Company's aggregate exposures to market risks against economic capital, regulatory required capital and earnings at risk targets.

The following table outlines the Company's key market risks and identifies the risk management strategies which contribute to managing these risks.

| | 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 |

***Market risk factors***

**Publicly traded equity performance risk**

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 general fund products and surplus segment.

The Company's most significant source of equity risk arises from variable annuity and segregated funds with guarantees, where the guarantees are linked to the performance of the underlying funds. Guaranteed benefits are contingent and only 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 the Company's actuarial valuation, additional liabilities may need to be established to cover the contingent liabilities, resulting in a reduction in shareholders' net income 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, a sustained flat or a decline in 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.

Further, 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 the Company to change the investment mix assumed for future cash flows, which may increase policy liabilities and reduce net income attributed to shareholders. In addition, 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. In addition, to the extent publicly traded equities are held as AFS, other than temporary impairments that arise will reduce income.

**Interest rate and spread risk**

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.

Interest rate and spread 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 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.

A general decline in interest rates, without a change in corporate bond spreads and swap spreads, will reduce the assumed yield on future investments used in the valuation of policy liabilities, resulting in an increase in policy liabilities and a reduction in net income. A

general increase in interest rates, without a change in corporate bond spreads and swap spreads, will result in a decrease in policy liabilities and an increase in net income. In addition, decreases in corporate bond spreads and increases in swap spreads will result in an increase in policy liabilities and a reduction in net income, while an increase in corporate bond spreads and 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.

**Alternative long-duration asset performance risk**
Alternative long-duration asset performance risk arises from general fund investments in commercial real estate, timber properties, agricultural properties, 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. Alternative long-duration asset assumptions vary by asset class and generally have a similar impact on policy liabilities as publicly traded equities would. If actual returns are lower than the expected returns, the Company's policy liabilities will increase, reducing net income attributed to shareholders. Further, for products where the investment strategy applied to future cash flows in the policy valuation includes investing a specified portion of future policy cash flows in alternative long-duration assets, a decline in the value of these assets relative to other assets could require the Company to change the investment mix assumed for future cash flows, increasing policy liabilities and reducing net income. In addition, a reduction in the outlook for expected future returns for alternative long-duration assets, which could result from a fundamental change in future expected economic growth, would increase policy liabilities and reduce net income attributed to shareholders.

**Foreign exchange risk**
The Company's results are reported in Canadian dollars. A substantial portion of its business is transacted in currencies other than Canadian dollars, mainly U.S. dollars, Hong Kong dollars and Japanese yen. If the Canadian dollar strengthens, reported earnings would decline and the Company's 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, the Company's regulatory capital ratios would be reduced. A weakening of the Canadian dollar against the foreign currencies in which the Company does business would have the opposite effect, and would increase reported Canadian dollar earnings and shareholders' equity, and would potentially increase the Company's regulatory capital ratios.

***Market risk management strategies***

**Product design and pricing strategy**
The Company's policies, standards and standards of practice with respect to product design and pricing are designed with the objective of aligning its product offerings with its risk taking philosophy and risk appetite, and in particular, that incremental risk generated from new sales aligns with its strategic risk objectives and risk targets. The specific design features of its product offerings, including level of benefit guarantees, policyholder options, fund offerings and availability restrictions as well as its associated investment strategies help to mitigate the level of underlying risk. The Company regularly reviews and modifies all key features within its product offerings, including premiums and fee charges with a goal of meeting both profit and risk targets. Certain of the Company's 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 business reinsurance arrangements and material insurance underwriting initiatives must be reviewed and approved by the Chief Risk Officer or key individuals within Divisional and Corporate Risk Management.

**Variable annuity guarantee 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 both public equity and bond fund performance and interest rate movements. The objective of the dynamic hedging strategy is to offset as closely as possible, the change in the economic value of guarantees with the profit and loss from the hedge asset portfolio. The economic value of guarantees moves in close tandem with, but not exactly as, the variable annuity guarantee policy liabilities, as it reflects best estimate liabilities and does not include any liability provisions for adverse deviations.

The Company's current 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. The Company dynamically rebalances these hedge instruments as market conditions change, in order to maintain the hedged position within established limits. The Company may consider the use of additional hedge instruments opportunistically in the future.

The Company's 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;
- 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 second order 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 macro equity risk hedging strategy is designed to hedge a portion of the Company's shareholders' earnings sensitivity to public equity market movements arising from the following sources in order to maintain its overall earnings sensitivity to public equity market movements below targeted levels:

- General fund equity holdings backing non-participating liabilities;
- Variable life insurance;
- Variable annuity guarantees not dynamically hedged;
- Unhedged provisions for adverse deviation related to variable annuity guarantees dynamically hedged;
- Variable annuity fees not associated with guarantees; and
- Fees on segregated funds without guarantees, mutual funds and institutional assets managed.

The Company currently executes its macro equity risk hedging strategy by shorting equity futures and executing currency futures, and rolling them over at maturity. The Company may consider the use of alternative long maturity instruments opportunistically in the future. The notional value of equity futures contracts that were shorted as part of the Company's macro equity risk hedging strategy as at December 31, 2012 was approximately $7.8 billion.

**Asset liability management strategy**
The Company's asset liability management strategy is designed to help ensure the market risks embedded in its 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, alternative long-duration asset performance and foreign exchange rate movements.

General fund product liabilities are segmented into groups with similar characteristics that are supported by specific asset segments. Each segment is managed 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.

**Foreign exchange risk management strategy**
The Company's foreign exchange risk management strategy is designed to hedge the sensitivity of its 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 movements in foreign exchange rates. These changes occur when assets and liabilities related to business conducted in currencies other than Canadian dollars are translated to Canadian dollars at year end exchange rates.

The Company's policy is to generally match the currency of its assets with the currency of the liabilities they support, and similarly, the Company has a policy of generally matching the currency of the assets in its shareholders' equity account to the currency of its required capital. Where assets and liabilities are not matched, forward contracts and currency swaps are used to stabilize the Company's capital ratios and its capital adequacy relative to economic capital when foreign exchange rates change.

***Sensitivities and risk exposure measures***

**Caution related to sensitivities**
In these consolidated financial statements, the Company has provided sensitivities and risk exposure measures for certain risks. These include the 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 returns and investment activity assumed in the future. 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 the Company's internal models. For these reasons, these 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, the Company cannot provide assurance that the actual impact on net income attributed to shareholders will be as indicated.

**Variable annuity and segregated fund guarantees**

The table below provides information related to the Company's variable annuities and segregated funds products with guarantees. Under IFRS, the guarantees associated with these products are considered to be embedded derivatives. However, as these guarantees either contain significant insurance risk and/or are closely related to the host contract, the embedded derivatives are not required to be accounted for separately at fair value in the Company's consolidated financial statements. Variable annuity and segregated fund guarantees make up the most material portion of the embedded derivatives exempt from separate measurement at fair value.

Variable annuity products with Guaranteed Minimum Death Benefit ("GMDB") features guarantee the contract holder a minimum payment on death of, depending on the contract features: (a) the total deposits made to the contract adjusted for any partial withdrawals; (b) the total deposits made to the contract adjusted for any partial withdrawals plus a minimum return; or (c) the highest contract fund value on a prior specified anniversary date adjusted for any withdrawals following that specified anniversary date.

Variable annuity products with Guaranteed Minimum Accumulation Benefit ("GMAB") features guarantee the contract holder a minimum payment at the end of a specified term of either, depending on the contract features: (a) the total deposits made to the contract adjusted for any partial withdrawals; or (b) the highest contract fund valued on a prior specified anniversary date adjusted for any withdrawals following that specified anniversary date.

Variable annuity products with Guaranteed Minimum Income Benefit ("GMIB") features provide a guaranteed minimum lifetime annuity, which may be elected by the contract holder after a stipulated waiting period (seven to 15 years). The Company ceased selling products with this guarantee in 2004.

Variable annuity products with Guaranteed Minimum Withdrawal Benefit ("GMWB") features provide contract holders a minimum annual withdrawal amount over a specified time period or in some cases for as long as they live or as long as either they or their spouse lives, of a specified percentage of a benefit base, equaling total deposits adjusted for prior withdrawals in excess of specified allowed amounts. In some cases, depending on contract features, the benefit base may be increased at specified dates either (a) to the contract fund value if higher, or (b) by specified amounts in the case where no withdrawals are made by the contract holder.

**Variable annuity and segregated fund guarantees**

| As at December 31, | 2012 | | | 2011 | | |
|---|---|---|---|---|---|---|
| | Guarantee value | Fund value | Amount at risk[4] | Guarantee value | Fund value | Amount at risk[4] |
| Guaranteed minimum income benefit[1] | **$ 6,581** | **$ 4,958** | **$ 1,630** | $ 7,518 | $ 5,358 | $ 2,163 |
| Guaranteed minimum withdrawal benefit | **65,481** | **58,659** | **7,183** | 66,655 | 56,954 | 9,907 |
| Guaranteed minimum accumulation benefit | **20,380** | **21,468** | **1,383** | 23,509 | 23,030 | 2,813 |
| Gross living benefits[2] | **$ 92,442** | **$ 85,085** | **$ 10,196** | $ 97,682 | $ 85,342 | $ 14,883 |
| Gross death benefits[3] | **13,316** | **10,622** | **2,206** | 15,202 | 11,614 | 3,232 |
| Total gross of reinsurance and dynamic hedging | **$ 105,758** | **$ 95,707** | **$ 12,402** | $ 112,884 | $ 96,956 | $ 18,115 |
| Living benefits reinsured | **$ 5,780** | **$ 4,358** | **$ 1,427** | $ 6,491 | $ 4,622 | $ 1,871 |
| Death benefits reinsured | **3,673** | **3,140** | **709** | 4,360 | 3,430 | 1,104 |
| Total reinsured | **$ 9,453** | **$ 7,498** | **$ 2,136** | $ 10,851 | $ 8,052 | $ 2,975 |
| Total, net of reinsurance | **$ 96,305** | **$ 88,209** | **$ 10,266** | $ 102,033 | $ 88,904 | $ 15,140 |
| Living benefits dynamically hedged | **$ 55,464** | **$ 52,585** | **$ 4,528** | $ 55,522 | $ 50,550 | $ 6,346 |
| Death benefits dynamically hedged | **5,453** | **3,945** | **558** | 5,133 | 3,461 | 739 |
| Total dynamically hedged | **$ 60,917** | **$ 56,530** | **$ 5,086** | $ 60,655 | $ 54,011 | $ 7,085 |
| Living benefits retained | **$ 31,198** | **$ 28,142** | **$ 4,241** | $ 35,669 | $ 30,170 | $ 6,666 |
| Death benefits retained | **4,190** | **3,537** | **939** | 5,709 | 4,723 | 1,389 |
| **Total, net of reinsurance and dynamic hedging** | **$ 35,388** | **$ 31,679** | **$ 5,180** | $ 41,378 | $ 34,893 | $ 8,055 |

[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 as outlined in footnote (3).

[3] Death benefits include standalone 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 GMDB, the net amount at risk is defined as the current GMDB in excess of the current account balance. For GMIB, the net amount at risk is defined as the excess of the current annuitization income base over the current account value. For all guarantees, the net amount at risk is floored at zero at the single contract level.

The insurance and investment contract liabilities established for these benefits were $7,948 at December 31, 2012 (2011 – $10,021). These insurance and investment contract liabilities include the liabilities for both the hedged and the unhedged business. For

unhedged business, insurance and investment contract liabilities were $2,695 at December 31, 2012 (2011 – $3,586). The insurance and investment contract liabilities for the hedged block were $5,253 at December 31, 2012 (2011 – $6,435). The decrease in the liabilities was primarily due to the favourable impact of improved public equity markets.

**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,<br>Investment category | 2012 | 2011 |
|---|---|---|
| Equity funds | **$ 32,700** | $ 33,914 |
| Balanced funds | **57,236** | 55,920 |
| Bond funds | **10,232** | 10,524 |
| Money market funds | **2,711** | 3,009 |
| Other fixed interest rate investments | **1,378** | 1,519 |
| **Total** | **$ 104,257** | $ 104,886 |

**Publicly traded equity performance risk – risk exposure measures**

The tables below show the potential impact on net income attributed to shareholders resulting from immediate 10, 20 and 30 per cent changes in market values of publicly traded equities followed by a return to the expected level of growth assumed in the valuation of insurance and investment contract liabilities, including embedded derivatives. The potential impact is shown before and after taking into account the impact of the change in markets on the hedge assets. The potential impact is shown assuming that (a) the change in value of the hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities, including the provisions for adverse deviation and (b) that the change in value is not completely offset. In 2012 the Company refined its methodology related to the estimated amount that would not be completely offset. The refinement in methodology, assumes that provision for adverse deviation is not offset and that the hedge assets are based on the actual position at the period end. (Previously the methodology assumed that for a 10, 20 and 30 per cent decrease in the market value of equities, the profit from the hedge assets offsets 80, 75 and 70 per cent, respectively, of the loss arising from the change in the policy liabilities associated with the guarantees dynamically hedged. For a 10, 20 and 30 per cent market increase in the market value of equities the loss on the dynamic hedges was assumed to be 120, 125 and 130 per cent of the gain from the dynamically hedged variable annuity guarantee liabilities, respectively.)

While the Company cannot reliably estimate the amount of the change in dynamically hedged variable annuity liabilities that will not be offset by the profit or loss on the dynamic hedge assets, the Company makes certain assumptions for the purposes of estimating the impact on net income attributed to shareholders.

**Potential impact on net income attributed to shareholders arising from changes to public equity returns** [1]

| As at December 31, 2012 | -30% | -20% | -10% | +10% | +20% | +30% |
|---|---|---|---|---|---|---|
| Net impact assuming the change in the value of the hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities[2],[3] | **$ (1,210)** | **$ (720)** | **$ (310)** | **$ 200** | **$ 290** | **$ 240** |
| Impact of assuming the change in value of the dynamic hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities[4] | **(710)** | **(470)** | **(190)** | **(10)** | **(50)** | **(70)** |
| Net impact assuming the change in value of the dynamic hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities[2],[3],[4] | **$ (1,920)** | **$ (1,190)** | **$ (500)** | **$ 190** | **$ 240** | **$ 170** |
| **As at December 31, 2011** | | | | | | |
| Net impact assuming the change in the value of the hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities[2],[3] | $ (2,050) | $ (1,280) | $ (600) | $ 500 | $ 910 | $ 1,220 |
| Impact of assuming the change in value of the dynamic hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities[4] | (700) | (460) | (200) | (10) | (20) | (30) |
| Net impact assuming the change in value of the dynamic hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities[2],[3],[4] | $ (2,750) | $ (1,740) | $ (800) | $ 490 | $ 890 | $ 1,190 |

[1] See "Caution related to sensitivities" above.

[2] The impact to general fund equities is at a point-in-time and does not include: (i) any potential impact on public equity weightings; (ii) any gains or losses on public equities held in the Corporate and Other segment; or (iii) any gains or losses on public equity investments held in Manulife Bank of Canada. The sensitivities assume that the participating policy funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in equity markets.

[3] Best estimate liabilities and associated provisions for adverse deviation.

[4] Represents the impact of re-balancing equity hedges for dynamically hedged variable annuity guarantee liabilities at 5% market intervals. Also represents the impact of changes in markets on provisions for adverse deviation that are not hedged, but does not include any impact in respect of other sources of hedge ineffectiveness e.g. basis risk, realized volatility and equity, interest rate correlations different from expected among other factors. For presentation purposes, numbers are rounded.

**Interest rate and spread risk – risk exposure measures**

The following table shows the potential impact on net income attributed to shareholders of a change of one per cent, 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 and corporate spreads, relative to the rates assumed in the valuation of insurance and investment contract liabilities, including embedded derivatives.

Policy liabilities are determined by testing a range of future interest rate scenarios, including those prescribed by actuarial standards of practice. These future scenarios are derived from interest rates and spreads at the end of the period. The scenario that produces the highest reserve requirement determines the reserve held at the end of the period and is called the booking scenario. Based on interest rates at December 31, 2012, a 100 basis point decline in interest rates would result in a movement to a different prescribed reinvestment scenario for policy liability valuation in some jurisdictions, which would produce a higher reserve. The potential earnings impact of a 100 basis point decline in interest rates in 2012 includes approximately $200 related to the impact of the scenario change. This amount would be expected to reduce over time, should risk free rates remain unchanged, as the ultimate reinvestment rate moves toward current risk free rates. Further, as the sensitivity to a 100 basis point decline in interest rates includes the impact of the change in prescribed reinvestment scenarios, the impact of changes to interest rates for less than, or more than, the amounts indicated are unlikely to be linear. For variable annuity guarantee liabilities that are dynamically hedged, it is assumed that interest rate hedges are rebalanced at 20 basis point intervals. The impact does not allow for any potential changes to the ultimate reinvestment rate ("URR") assumptions or other potential impacts to lower interest rate levels.

**Potential impact on net income attributed to shareholders of an immediate one per cent parallel change in interest rates relative to rates assumed in the valuation of policy liabilities, including embedded derivatives and before the impact of the change in value of AFS fixed income investments**[1],[2],[3],[4],[5]

| As at December 31, | 2012 | | 2011 | |
|---|---|---|---|---|
| | -100bp | +100bp | -100bp | +100bp |
| General fund products[3] | **$ (200)** | **$ –** | $ (500) | $ 350 |
| Variable annuity guarantees[4] | **(200)** | **200** | (500) | 350 |
| **Total** | **$ (400)** | **$ 200** | $ (1,000) | $ 700 |

(1) See "Caution related to sensitivities" above.
(2) 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.
(3) The sensitivities assume that the participating insurance and investment contract funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in interest rates.
(4) For variable annuity liabilities that are dynamically hedged, it is assumed that interest rate hedges are rebalanced at 20 basis point intervals.
(5) For general fund adjustable benefit products subject to minimum rate guarantees, the sensitivities are based on the assumption that credited rates will be floored at the minimum.

The decrease in sensitivity from December 31, 2011 was primarily related to risk reduction action taken through the year.

The potential impact on annual net income attributed to shareholders provided in the table above does not include any impact arising from the sale of fixed income assets held in the Company's surplus segment. Changes in the market value of these assets, if realized, may provide a natural economic offset to the interest rate risk arising from the Company's 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 unrealized gains or losses.

**Potential impact on net income attributed to shareholders arising from changes to corporate and swap spreads** [1],[2],[3]

| As at December 31, | 2012 | 2011 |
|---|---|---|
| **Corporate spreads**[4] | | |
| Increase 50 basis points | **$ 500** | $ 500 |
| Decrease 50 basis points | **(1,000)** | (900) |
| **Swap spreads** | | |
| Increase 20 basis points | **(600)** | (600) |
| Decrease 20 basis points | **600** | 600 |

(1) See "Caution related to sensitivities" above. Actual results may differ materially from these estimates.
(2) The impact on net income attributed to shareholders assumes no gains or losses are realized on AFS fixed income assets held in the surplus segment and excludes the impact arising from changes in segregated fund bond fund value arising from changes in credit spreads. The sensitivities assume that the participating policy funds are 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 and investment market and activities 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 five years. Sensitivities to 50 basis point change in corporate spreads were estimated at December 31, 2011.

Based on spreads at the end of 2012, a 50 basis point decline in corporate spreads would result in a movement to a different prescribed reinvestment scenario for policy liability valuation in some jurisdictions which would produce a higher reserve. The potential impact of a 50 basis point decline in 2012 includes approximately $400 related to the impact of the scenario change. This amount would be expected to reduce over time, should risk free rates remain unchanged, as the moving average the ultimate reinvestment rate is based on moves toward current risk free rates. Further, as the sensitivity to a 50 basis point decline in corporate spreads includes the impact of the change in prescribed reinvestment scenarios, the impact of changes to corporate spreads for less than, or more than, the amounts indicated are unlikely to be linear.

**Alternative long-duration asset performance risk – risk exposure measures**

The following table shows the potential impact on net income attributed to shareholders resulting from changes in market values of alternative long-duration assets different than the expected levels assumed in the valuation of insurance and investment contract liabilities.

**Potential impact on net income attributed to shareholders arising from changes in alternative long-duration asset returns** (1),(2),(3)

| As at December 31, | 2012 | | 2011 | |
|---|---|---|---|---|
| | -10% | +10% | -10% | +10% |
| Real estate, agriculture and timber assets | **$ (900)** | **$ 900** | $ (750) | $ 750 |
| Private equities and other alternative long-duration assets | **(800)** | **700** | (550) | 550 |
| **Alternative long-duration assets** | **$ (1,700)** | **$ 1,600** | $ (1,300) | $ 1,300 |

(1) See “Caution related to sensitivities” above.

(2) This impact is calculated as at a point-in-time and does not include: (i) any potential impact on alternative long-duration asset weightings; (ii) any gains or losses on alternative long-duration investments held in the Corporate and other segment; or (iii) any gains or losses on alternative long-duration investments held in Manulife Bank of Canada.

(3) The sensitivities assume that the participating policyholder funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in alternative long-duration assets.

The increased sensitivity from December 31, 2011 to December 31, 2012 is primarily related to the fall in interest rates in 2012, (reducing the rate at which funds can reinvest), as well as the impact of changes in methods and assumptions and increase in market value of the alternative long-duration assets over the year.

**(b) Foreign currency risk for financial instruments**

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, 2012, the Company did not have a material unmatched currency exposure.

**(c) Liquidity risk**

Liquidity risk is the risk that sufficient funds are not available to meet both expected and unexpected cash and/or collateral demands in a timely and cost effective manner. Under stressed conditions, unexpected cash and collateral demands could arise primarily from an increase in the level of policyholders either systemically terminating policies with cash surrender values or not renewing policies when they mature, deposit withdrawals, the level of borrowers renewing or extending their loans when they mature, derivative settlements and collateral requirements and reinsurance settlements.

The Company’s liquidity risk management strategies are designed to ensure that sufficient funds are readily available to meet its financial obligations as they come due. Liquidity risk is mitigated through the Company’s holdings of cash or cash equivalents, investment grade marketable securities and its broad access to various funding sources. The Company maintains centralized pools of high quality liquid assets and investment grade marketable securities to support its operations and contingent liquidity demands. Funding is obtained through premiums, deposits, asset securitization, and bank credit and other funding programs.

The Company mitigates liquidity risk by maintaining liquidity levels above minimum internal requirements. Minimum operating liquidity is set above the level of the highest one month’s operating cash outflows projected over the next 12 months. Strategic liquidity is established based on immediate and longer term liquidity requirements under stress conditions whereby policyholder liabilities and unencumbered liquid assets are risk-adjusted for their potential for withdrawals and convertibility to cash, respectively. Liquidity is also assessed under multiple market stress scenarios, over various time horizons, whereby liquid assets are adjusted for changes in market value, derivative pledging requirements and expected convertibility to cash. Adjusted assets are compared against adjusted obligations which reflect policy surrenders, contractual obligations, derivative margin requirements and other forecasted cash requirements. In all liquidity measures, pledged assets are not considered as available liquid assets to support obligations.

The following table outlines the maturity of the Company's significant financial liabilities.

**Maturity of financial liabilities** [1],[2]

| As at December 31, 2012 | Less than 1 year | 1 to 3 years | 3 to 5 years | Over 5 years | Total |
|---|---|---|---|---|---|
| Long-term debt | **$ 350** | **$ 3,041** | **$ 14** | **$ 2,047** | **$ 5,452** |
| Capital instruments | **–** | **–** | **–** | **3,156** | **3,156** |
| Derivative liabilities | **73** | **262** | **386** | **6,485** | **7,206** |
| Bank deposits | **14,997** | **2,192** | **1,619** | **49** | **18,857** |

[1] The amounts shown above are net of the related unamortized deferred issue costs.
[2] Class A preferred shares, Series 1 are redeemable by the Company by payment of cash or issuance of MFC common shares and are convertible at the option of the holder into MFC common shares on or after December 15, 2015. These shares have not been included in the above table.

### (d) 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 or continued poor 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 loans, including mortgages, private placement and bank loans, 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. Provisions for loan losses are calculated to reduce the carrying value of the loans to estimated net realizable value. The establishment of such provisions takes into consideration normal historical credit loss levels and future expectations, with an allowance for adverse deviations. In addition, actuarial 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. Allowance for losses on reinsurance contracts is 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 actuarial liabilities.

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

#### 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, | 2012 | 2011 |
|---|---|---|
| Bonds | | |
| FVTPL | **$ 100,283** | $ 99,682 |
| AFS | **18,998** | 20,805 |
| Loans | | |
| Mortgages | **35,082** | 35,023 |
| Private placements | **20,275** | 20,294 |
| Policy loans | **6,793** | 6,827 |
| Bank loans | **2,142** | 2,288 |
| Derivative assets | **14,707** | 15,472 |
| Accrued investment income | **1,802** | 1,802 |
| Reinsurance assets | **18,681** | 10,728 |
| Other financial assets | **3,458** | 2,802 |
| **Total** | **$ 222,221** | $ 215,723 |

#### Credit quality

For mortgages and private placements, the Company evaluates credit quality through regular monitoring of credit related exposures, considering both qualitative and quantitative factors in assigning an internal risk rating. These ratings are updated at least annually.

A write-off 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 recorded investment by credit quality indicator.

| As at December 31, 2012 | AAA | AA | A | BBB | BB | B & lower | Total |
|---|---|---|---|---|---|---|---|
| Loans (excluding Manulife Bank of Canada) | | | | | | | |
| Private placements | **$ 697** | **$ 2,633** | **$ 5,709** | **$ 9,116** | **$ 835** | **$ 1,285** | **$ 20,275** |
| Mortgages | **2,301** | **2,024** | **3,781** | **10,749** | **631** | **357** | **19,843** |
| **Total** | **$ 2,998** | **$ 4,657** | **$ 9,490** | **$ 19,865** | **$ 1,466** | **$ 1,642** | **$ 40,118** |

| As at December 31, 2011 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Loans (excluding Manulife Bank of Canada) | | | | | | | |
| Private placements | $ 608 | $ 2,436 | $ 5,902 | $ 8,977 | $ 1,178 | $ 1,193 | $ 20,294 |
| Mortgages | 2,262 | 1,802 | 3,835 | 12,546 | 714 | 419 | 21,578 |
| **Total** | $ 2,870 | $ 4,238 | $ 9,737 | $ 21,523 | $ 1,892 | $ 1,612 | $ 41,872 |

For loans and mortgages held by Manulife Bank of Canada, the Company assigns an internal risk rating ranging from “1 – little or no risk” to “8 – doubtful”. The internal risk ratings are updated at least annually and reflect the credit quality of the lending asset including such factors as original credit score and product characteristics.

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 recorded investment by credit quality indicator.

| As at December 31, 2012 | 1 | 2 | 3 | 4 & lower | Total |
|---|---|---|---|---|---|
| Manulife Bank of Canada | | | | | |
| Mortgages | **$ –** | **$ 9,425** | **$ 5,718** | **$ 96** | **$ 15,239** |
| Bank loans | **–** | **398** | **1,714** | **30** | **2,142** |
| **Total** | **$ –** | **$ 9,823** | **$ 7,432** | **$ 126** | **$ 17,381** |

| As at December 31, 2011 | | | | | |
|---|---|---|---|---|---|
| Manulife Bank of Canada | | | | | |
| Mortgages | $ – | $ 9,766 | $ 3,605 | $ 74 | $ 13,445 |
| Bank loans | – | 414 | 1,840 | 34 | 2,288 |
| **Total** | $ – | $ 10,180 | $ 5,445 | $ 108 | $ 15,733 |

**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 bonds. Impairment losses on AFS bonds are recognized in income when there is objective evidence of impairment. Impairment is considered to have occurred when it is deemed probable that the Company will not be able to collect all amounts due according to the contractual terms of the bond. In addition, the Company reports as an impairment certain declines in the fair value of bonds designated as FVTPL which it deems represent an impairment.

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

| As at December 31, 2012 | Past due but not impaired: Less than 90 days | Past due but not impaired: 90 days and greater | Past due but not impaired: Total | Total impaired |
|---|---|---|---|---|
| Bonds | | | | |
| FVTPL | **$ 69** | **$ –** | **$ 69** | **$ 156** |
| AFS | **4** | **–** | **4** | **15** |
| Loans | | | | |
| Private placements | **102** | **12** | **114** | **83** |
| Mortgages and bank loans | **79** | **27** | **106** | **81** |
| Other financial assets | **67** | **43** | **110** | **2** |
| **Total** | **$ 321** | **$ 82** | **$ 403** | **$ 337** |

| As at December 31, 2011 | | | | |
|---|---|---|---|---|
| Bonds | | | | |
| FVTPL | $ – | $ – | $ – | $ 166 |
| AFS | 1 | – | 1 | 43 |
| Loans | | | | |
| Private placements | 117 | – | 117 | 182 |
| Mortgages and bank loans | 139 | 67 | 206 | 91 |
| Other financial assets | 21 | 56 | 77 | 4 |
| **Total** | $ 278 | $ 123 | $ 401 | $ 486 |

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

### Impaired loans

| As at and for the year ended December 31, 2012 | Recorded investment[1] | Unpaid principal balance | Related allowance | Average recorded investment[1] | Interest income recognized |
|---|---|---|---|---|---|
| Private placements | **$ 118** | **$ 140** | **$ 35** | **$ 164** | **$ –** |
| Mortgages and bank loans | **135** | **126** | **54** | **167** | **–** |
| **Total** | **$ 253** | **$ 266** | **$ 89** | **$ 331** | **$ –** |
| **As at and for the year ended December 31, 2011** | | | | | |
| Private placements | $ 223 | $ 336 | $ 41 | $ 251 | $ – |
| Mortgages and bank loans | 144 | 143 | 53 | 163 | – |
| **Total** | $ 367 | $ 479 | $ 94 | $ 414 | $ – |

[1] Recorded investment is the carrying amount of the investment after any direct write-offs, but before deducting any related allowance for impairment.

### Allowance for loan losses

| For the years ended December 31, | 2012: Mortgages and bank loans | 2012: Private placements | 2012: Total | 2011: Mortgages and bank loans | 2011: Private placements | 2011: Total |
|---|---|---|---|---|---|---|
| Balance, January 1 | **$ 53** | **$ 41** | **$ 94** | $ 34 | $ 84 | $ 118 |
| Provisions | **29** | **6** | **35** | 45 | 18 | 63 |
| Recoveries | **(12)** | **(8)** | **(20)** | (21) | (46) | (67) |
| Write-offs[1] | **(16)** | **(4)** | **(20)** | (5) | (15) | (20) |
| **Balance, December 31** | **$ 54** | **$ 35** | **$ 89** | $ 53 | $ 41 | $ 94 |

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

### (e) 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, 2012 | Gross liabilities | Reinsurance assets | Net liabilities |
|---|---|---|---|
| United States and Canada | **$ 169,949** | **$ (18,585)** | **$ 151,364** |
| Asia and other | **32,330** | **(96)** | **32,234** |
| **Total insurance and investment contract liabilities, including embedded derivatives** | **$ 202,279** | **$ (18,681)** | **$ 183,598** |

| As at December 31, 2011 | | | |
|---|---|---|---|
| United States and Canada | $ 163,819 | $ (10,545) | $ 153,274 |
| Asia and other | 29,327 | (183) | 29,144 |
| **Total insurance and investment contract liabilities, including embedded derivatives** | $ 193,146 | $ (10,728) | $ 182,418 |

### (f) 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, 2012, the Company had loaned securities (which are included in invested assets) with a market value of $1,456 (2011 – $1,274). The Company holds collateral with a current market value that exceeds the value of securities lent in all cases.

The Company engages in repurchase and reverse repurchase transactions to generate fee income and to take possession of securities to cover short positions in similar instruments. As at December 31, 2012, the Company had engaged in reverse repurchase transactions of $608 (2011 – $64) which are recorded as a short-term receivable. There were outstanding repurchase agreements of $641 as at December 31, 2012 (2011 – $624).

### (g) 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 bond 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, 2012 | Notional amount[2] | Fair value | Weighted average maturity (in years)[3] |
|---|---|---|---|
| **Single name CDSs**[1] | | | |
| Corporate debt | | | |
| AAA | **$ 25** | **$ 1** | **4** |
| AA | **85** | **3** | **4** |
| A | **144** | **3** | **4** |
| BBB | **10** | **–** | **5** |
| Total single name CDSs | **$ 264** | **$ 7** | **4** |
| **Total CDS protection sold** | **$ 264** | **$ 7** | **4** |

| As at December 31, 2011 | | | |
|---|---|---|---|
| **Single name CDSs**[1] | | | |
| Corporate debt | | | |
| AAA | $ 25 | $ 1 | 5 |
| AA | 87 | 2 | 5 |
| A | 107 | 1 | 5 |
| Total single name CDSs | $ 219 | $ 4 | 5 |
| **Total CDS protection sold** | $ 219 | $ 4 | 5 |

(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 credit default swaps is weighted based on notional amounts.

The Company holds no purchased credit protection at December 31, 2012. As at December 31, 2011, the Company held purchased credit protection with a total notional amount of $32 and fair value of $(1). As at December 31, 2011, the average credit rating of the counterparties guaranteeing the underlying credit was A+ and the weighted average maturity was 5.5 years.

**(h) Derivatives**

The Company's point in time exposure to losses related to the credit risk of the counterparty of derivatives transactions 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 negative positions and the impact of collateral on hand. The Company seeks to limit the risk of credit losses from derivative counterparties by: establishing a minimum acceptable counterparty credit rating of A– from external rating agencies; 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 A– or higher. As at December 31, 2012, the percentage of the Company's derivative exposure which was with counterparties rated AA– or higher amounted to 19 per cent (2011 – 26 per cent). The Company's exposure to credit risk was mitigated by $9,249 fair value of collateral held as security as at December 31, 2012 (2011 – $8,922).

As at December 31, 2012, the largest single counterparty exposure, without taking into account the impact of master netting agreements or the benefit of collateral held, was $2,922 (2011 – $3,029). The net exposure to this counterparty, after taking into account master netting agreements and the fair value of collateral held, was nil (2011 – $7). As at December 31, 2012, 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 $15,216 (2011 – $15,924). Net exposure across all counterparties, after taking into account master netting agreements and the benefit of fair value of collateral held, was $23 (2011 – $293).

**(i) 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, | 2012 | 2011 |
|---|---|---|
| Bonds and private placements rated as investment grade BBB or higher [1] | **95%** | 95% |
| Government bonds as a per cent of total bonds | **48%** | 47% |
| Government private placements as a per cent of total private placements | **10%** | 11% |
| Highest exposure to a single non-government bond and private placement issuer | **$ 777** | $ 723 |
| Largest single issuer as a per cent of the total stock portfolio | **2%** | 1% |
| Income producing commercial office properties (2012 – 82% of total real estate, 2011 – 82%) | **$ 6,957** | $ 6,127 |
| Largest concentration of mortgages and real estate [2] – Ontario, Canada (2012 – 28%, 2011 – 26%) | **$ 12,070** | $ 11,230 |

[1] Investment grade bonds and private placements include 29% rated A, 18% rated AA and 29% rated AAA (2011 – 28%, 19% and 30%) 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 bond and private placement portfolio by sector and industry.

**Bonds and private placements**

| | 2012 | | 2011 | |
|---|---|---|---|---|
| As at December 31, | Carrying value | % of total | Carrying value | % of total |
| Government and agency | **$ 58,780** | **42** | $ 58,904 | 42 |
| Utilities | **21,412** | **15** | 20,114 | 14 |
| Financial | **20,505** | **15** | 21,161 | 15 |
| Energy | **9,644** | **7** | 9,158 | 6 |
| Consumer (non-cyclical) | **7,281** | **5** | 6,686 | 5 |
| Industrial | **7,085** | **5** | 7,116 | 5 |
| Securitized | **3,801** | **3** | 5,734 | 4 |
| Other | **11,048** | **8** | 11,908 | 9 |
| **Total** | **$ 139,556** | **100** | $ 140,781 | 100 |

**(j) 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 actuarial liabilities. The development of assumptions for future claims is based on Company and industry experience and predictive models; assumptions for policyholder behaviours are based on Company experience and predictive models. 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 manmade 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.

Manulife Financial 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. Manulife Financial further reduces exposure to claims concentrations by applying geographical aggregate retention limits for certain covers.

**(k) 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, 2012, the Company had $18,681 (2011 – $10,728) of reinsurance assets. Of this, 91 per cent (2011 – 84 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 $9,123 fair value of collateral held as security as at December 31, 2012 (2011– $1,972). Net exposure after taking into account offsetting agreements and the benefit of the fair value of collateral held was $9,558 (2011– $8,673).

## Note 11 Fair Value of Financial Instruments

Financial instruments refer to both on–and off-balance sheet instruments and may be assets or liabilities. These assets or liabilities are contracts that ultimately give rise to a right for one party to receive an asset and an obligation for another party to deliver an asset. Fair values reflect management's best estimates of the amounts at which instruments could be exchanged in a current transaction between willing parties and are generally calculated based on the characteristics of the instrument and the current economic and competitive environment.

The fair values and the basis for determining the fair values of invested assets, derivatives, long-term debt and liabilities for preferred shares and capital instruments are disclosed in notes 4, 5, 12 and 13, respectively.

The fair value of bank deposits is estimated at $18,951 as at December 31, 2012 (2011 – $18,100), compared to a carrying value of $18,857 as at December 31, 2012 (2011 – $18,010). The fair value of these financial instruments is determined by discounting the contractual cash flows, using market interest rates currently offered for deposits with similar terms and conditions.

The carrying values of accrued investment income, outstanding premiums, miscellaneous assets, policy benefits in the course of settlement, provision for unreported claims, policyholder amounts on deposit and other liabilities approximate their fair values due to their short-term nature.

**Financial instruments measured at fair value on the Consolidated Statements of Financial Position**

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 for determining the fair value of the financial instrument. 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. Valuations are based on quoted prices reflecting market transactions involving assets or liabilities identical to those being measured.

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 bonds 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") and other securities that have little or no price transparency. Embedded and complex derivative financial instruments are also included in Level 3.

In determining the fair value of its financial instruments, the Company uses observable market data, when available, and minimizes the use of unobservable inputs to the extent possible when determining fair value.

The following tables present the Company's assets and liabilities that are carried at fair value, categorized by level under the fair value hierarchy.

### Fair value of financial instruments

| As at December 31, 2012 | Total fair value | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| **ASSETS** | | | | |
| **Cash and short-term securities** | | | | |
| FVTPL | $ 531 | $ – | $ 531 | $ – |
| AFS | 8,364 | – | 8,364 | – |
| Other | 4,589 | 4,589 | – | – |
| **Bonds** | | | | |
| **FVTPL** | | | | |
| Canadian government & agency | 12,929 | – | 12,533 | 396 |
| U.S. government & agency | 18,361 | – | 18,181 | 180 |
| Other government & agency | 11,750 | – | 10,950 | 800 |
| Corporate | 54,024 | – | 51,930 | 2,094 |
| Residential mortgage/asset-backed securities | 207 | – | 13 | 194 |
| Commercial mortgage/asset-backed securities | 1,445 | – | 1,242 | 203 |
| Other securitized assets | 1,567 | – | 1,432 | 135 |
| **AFS** | | | | |
| Canadian government & agency | 3,014 | – | 2,804 | 210 |
| U.S. government & agency | 8,811 | – | 8,808 | 3 |
| Other government & agency | 1,866 | – | 1,797 | 69 |
| Corporate | 4,778 | – | 4,627 | 151 |
| Residential mortgage/asset-backed securities | 183 | – | 134 | 49 |
| Commercial mortgage/asset-backed securities | 154 | – | 114 | 40 |
| Other securitized assets | 192 | – | 151 | 41 |
| **Stocks** | | | | |
| FVTPL | 10,370 | 10,370 | – | – |
| AFS | 1,625 | 1,625 | – | – |
| **Other invested assets** [1] | | | | |
| Private stocks FVTPL | 4,832 | 5 | – | 4,827 |
| Private stocks AFS | 116 | – | 1 | 115 |
| **Derivative assets** | | | | |
| Interest rate contracts | 14,327 | – | 14,255 | 72 |
| Foreign exchange contracts | 358 | – | 357 | 1 |
| Equity contracts | 15 | – | 5 | 10 |
| Credit default swaps | 7 | – | 7 | – |
| **Segregated funds net assets** [2] | 207,985 | 190,170 | 15,603 | 2,212 |
| **Total assets carried at fair value** | $ 372,400 | $ 206,759 | $ 153,839 | $ 11,802 |
| **LIABILITIES** | | | | |
| **Derivative liabilities** | | | | |
| Interest rate contracts | $ 6,549 | $ – | $ 6,513 | $ 36 |
| Foreign exchange contracts | 648 | – | 603 | 45 |
| Equity contracts | 9 | – | 1 | 8 |
| Credit default swaps | – | – | – | – |
| **Investment contract liabilities** | 649 | – | 649 | – |
| **Total liabilities carried at fair value** | $ 7,855 | $ – | $ 7,766 | $ 89 |

[1] Only private stocks that are carried at fair value are included.
[2] Segregated funds net assets are recorded at fair value. Investment performance related to segregated funds net assets is fully offset by corresponding amounts credited to contract holders whose interest in the segregated funds net assets is recorded by the Company as segregated funds net liabilities.

## Fair value of financial instruments

| As at December 31, 2011 | Total fair value | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| **ASSETS** | | | | |
| **Cash and short-term securities** | | | | |
| FVTPL | $ 568 | $ – | $ 568 | $ – |
| AFS | 8,473 | – | 8,473 | – |
| Other | 3,772 | 3,772 | – | – |
| **Bonds** | | | | |
| **FVTPL** | | | | |
| Canadian government & agency | 11,030 | – | 10,813 | 217 |
| U.S. government & agency | 20,108 | – | 19,895 | 213 |
| Other government & agency | 10,318 | – | 9,650 | 668 |
| Corporate | 53,091 | – | 51,090 | 2,001 |
| Residential mortgage/asset-backed securities | 313 | – | 17 | 296 |
| Commercial mortgage/asset-backed securities | 3,170 | – | 2,898 | 272 |
| Other securitized assets | 1,652 | – | 1,505 | 147 |
| **AFS** | | | | |
| Canadian government & agency | 5,517 | – | 5,380 | 137 |
| U.S. government & agency | 7,904 | – | 7,902 | 2 |
| Other government & agency | 1,844 | – | 1,780 | 64 |
| Corporate | 5,017 | – | 4,738 | 279 |
| Residential mortgage/asset-backed securities | 94 | – | 13 | 81 |
| Commercial mortgage/asset-backed securities | 240 | – | 194 | 46 |
| Other securitized assets | 189 | – | 145 | 44 |
| **Stocks** | | | | |
| FVTPL | 8,778 | 8,778 | – | – |
| AFS | 1,465 | 1,465 | – | – |
| **Other invested assets** [1] | | | | |
| Private stocks FVTPL | 4,062 | 1 | – | 4,061 |
| Private stocks AFS | 121 | – | 1 | 120 |
| **Derivative assets** | | | | |
| Interest rate contracts | 14,934 | – | 14,848 | 86 |
| Foreign exchange contracts | 531 | – | 530 | 1 |
| Equity contracts | 3 | – | – | 3 |
| Credit default swaps | 4 | – | – | 4 |
| **Segregated funds net assets** [2] | 195,933 | 179,578 | 14,167 | 2,188 |
| **Total assets carried at fair value** | $ 359,131 | $ 193,594 | $ 154,607 | $ 10,930 |
| **LIABILITIES** | | | | |
| **Derivative liabilities** | | | | |
| Interest rate contracts | $ 6,824 | $ – | $ 6,748 | $ 76 |
| Foreign exchange contracts | 778 | – | 739 | 39 |
| Equity contracts | 24 | – | – | 24 |
| Credit default swaps | 1 | – | – | 1 |
| **Investment contract liabilities** | 748 | – | 748 | – |
| **Total liabilities carried at fair value** | $ 8,375 | $ – | $ 8,235 | $ 140 |

[1] Only private stocks that are carried at fair value are included.

[2] Segregated funds net assets are recorded at fair value. Investment performance related to segregated funds net assets is fully offset by corresponding amounts credited to contract holders whose interest in the segregated funds net assets is recorded by the Company as segregated funds net liabilities.

### Assets and liabilities measured at fair value on the Consolidated Statements of Financial Position using significant unobservable inputs (Level 3)

The tables below provide a fair value roll forward of the financial instruments for which significant unobservable inputs (Level 3) are used in the fair value measurement. The Company classifies the fair values of financial instruments within Level 3 if there are no observable markets for the instruments 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 partly to observable and unobservable factors.

**Roll forward of financial instruments measured at fair value using significant unobservable inputs (Level 3)**

The following table presents a roll forward for all financial instruments measured at fair value using significant unobservable inputs (Level 3) for the year ended December 31, 2012.

| | Balance as at January 1, 2012 | Net realized / unrealized gains (losses) included in: Net income[1] | OCI[2] | Purchases | Sales | Transfers Into Level 3[3] | Transfers Out of Level 3[3] | Currency movement | **Balance as at December 31, 2012** | Change in unrealized gains (losses) on instruments still held[4] |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bonds** | | | | | | | | | | |
| **FVTPL** | | | | | | | | | | |
| Canadian government & agency | $ 217 | $ (3) | $ – | $ 303 | $ – | $ – | $ (121) | $ – | $ 396 | $ (4) |
| U.S. government & agency | 213 | 7 | – | 31 | – | – | (68) | (3) | 180 | 7 |
| Other government & agency | 668 | 30 | – | 204 | (41) | – | (55) | (6) | 800 | 31 |
| Corporate | 2,001 | 132 | – | 527 | (231) | 72 | (315) | (92) | 2,094 | 120 |
| Residential mortgage/ asset-backed securities | 296 | 65 | – | – | (160) | 4 | (4) | (7) | 194 | 103 |
| Commercial mortgage/ asset-backed securities | 272 | 22 | – | 17 | (99) | 1 | (5) | (5) | 203 | 43 |
| Other securitized assets | 147 | 15 | – | – | (23) | – | – | (4) | 135 | 35 |
| | $ 3,814 | $ 268 | $ – | $ 1,082 | $ (554) | $ 77 | $ (568) | $ (117) | $ 4,002 | $ 335 |
| **AFS** | | | | | | | | | | |
| Canadian government & agency | $ 137 | $ 26 | $ (15) | $ 780 | $ (683) | $ – | $ (35) | $ – | $ 210 | $ – |
| U.S. government & agency | 2 | – | – | 1 | – | – | – | – | 3 | – |
| Other government & agency | 64 | – | 1 | 13 | (10) | – | – | 1 | 69 | – |
| Corporate | 279 | 10 | (2) | 31 | (137) | – | (19) | (11) | 151 | – |
| Residential mortgage/ asset-backed securities | 81 | (11) | 32 | – | (52) | 1 | (1) | (1) | 49 | – |
| Commercial mortgage/ asset-backed securities | 46 | (3) | 6 | 3 | (11) | – | – | (1) | 40 | – |
| Other securitized assets | 44 | (6) | 9 | – | (5) | – | – | (1) | 41 | – |
| | $ 653 | $ 16 | $ 31 | $ 828 | $ (898) | $ 1 | $ (55) | $ (13) | $ 563 | $ – |
| **Stocks** | | | | | | | | | | |
| AFS | $ – | $ – | $ – | $ 10 | $ (10) | $ – | $ – | $ – | $ – | $ – |
| **Other invested assets** | | | | | | | | | | |
| Private stocks FVTPL | 4,061 | 163 | – | 1,175 | (504) | 1 | – | (69) | 4,827 | 20 |
| Private stocks AFS | 120 | (2) | 1 | 2 | (4) | – | – | (2) | 115 | – |
| | $ 4,181 | $ 161 | $ 1 | $ 1,187 | $ (518) | $ 1 | $ – | $ (71) | $ 4,942 | $ 20 |
| **Net derivatives** | $ (46) | $ 7 | $ 34 | $ 43 | $ (29) | $ – | $ (8) | $ (7) | $ (6) | $ 38 |
| **Segregated funds net assets** | 2,188 | 99 | – | 115 | (141) | 1 | (3) | (47) | 2,212 | 68 |
| | $ 10,790 | $ 551 | $ 66 | $ 3,255 | $ (2,140) | $ 80 | $ (634) | $ (255) | $ 11,713 | $ 461 |

[1] These amounts are included in investment income on the Consolidated Statements of Income, except for the segregated funds amount which is included in the investment related section of the changes in net assets for segregated funds (note 23).

[2] These amounts are included in accumulated other comprehensive income (loss) on the Consolidated Statements of Financial Position.

[3] For financial 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.

[4] Amounts relate to these unrealized gains (losses) included in investment income for the year.

The following table presents a roll forward for all financial instruments measured at fair value using significant unobservable inputs (Level 3) for the year ended December 31, 2011.

| | Balance as at January 1, 2011 | Net realized / unrealized gains (losses) included in: Net income[1] | OCI[2] | Purchases | Sales | Transfers Into Level 3[3] | Transfers Out of Level 3[3] | Currency movement | Balance as at December 31, 2011 | Change in unrealized gains (losses) on instruments still held[4] |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bonds** | | | | | | | | | | |
| **FVTPL** | | | | | | | | | | |
| Canadian government & agency | $ 160 | $ 31 | $ – | $ 35 | $ – | $ – | $ (10) | $ 1 | $ 217 | $ 30 |
| U.S. government & agency | 164 | 26 | – | 111 | (32) | – | (59) | 3 | 213 | 23 |
| Other government & agency | 597 | (43) | – | 132 | (28) | 1 | – | 9 | 668 | (42) |
| Corporate | 1,705 | 108 | – | 561 | (381) | 57 | (118) | 69 | 2,001 | 113 |
| Residential mortgage/ asset-backed securities | 360 | 15 | – | – | (91) | 5 | – | 7 | 296 | 15 |
| Commercial mortgage/ asset-backed securities | 430 | (26) | – | – | (142) | 2 | – | 8 | 272 | 2 |
| Other securitized assets | 160 | 6 | – | – | (32) | 15 | (5) | 3 | 147 | 22 |
| | $ 3,576 | $ 117 | $ – | $ 839 | $ (706) | $ 80 | $ (192) | $ 100 | $ 3,814 | $ 163 |
| **AFS** | | | | | | | | | | |
| Canadian government & agency | $ 34 | $ 47 | $ 14 | $ 495 | $ (468) | $ 14 | $ – | $ 1 | $ 137 | $ – |
| U.S. government & agency | 5 | – | – | 2 | – | – | (5) | – | 2 | – |
| Other government & agency | 60 | (2) | (1) | 18 | (25) | 13 | – | 1 | 64 | – |
| Corporate | 259 | (1) | 9 | 71 | (89) | 46 | (26) | 10 | 279 | – |
| Residential mortgage/ asset-backed securities | 93 | – | 2 | – | (18) | 2 | – | 2 | 81 | – |
| Commercial mortgage/ asset-backed securities | 72 | (4) | (2) | – | (21) | – | – | 1 | 46 | – |
| Other securitized assets | 52 | (7) | 14 | – | (2) | 1 | (15) | 1 | 44 | – |
| | $ 575 | $ 33 | $ 36 | $ 586 | $ (623) | $ 76 | $ (46) | $ 16 | $ 653 | $ – |
| **Other invested assets** | | | | | | | | | | |
| Private stocks FVTPL | $ 3,282 | $ 182 | $ – | $ 879 | $ (346) | $ – | $ (3) | $ 67 | $ 4,061 | $ 152 |
| Private stocks AFS | 80 | 1 | (21) | 57 | (1) | – | – | 4 | 120 | – |
| | $ 3,362 | $ 183 | $ (21) | $ 936 | $ (347) | $ – | $ (3) | $ 71 | $ 4,181 | $ 152 |
| **Net derivatives** | $ (2) | $ (2) | $ (21) | $ 13 | $ – | $ – | $ (39) | $ 5 | $ (46) | $ 8 |
| **Segregated funds net assets** | 2,121 | 34 | – | 24 | (41) | – | – | 50 | 2,188 | 44 |
| | $ 9,632 | $ 365 | $ (6) | $ 2,398 | $ (1,717) | $ 156 | $ (280) | $ 242 | $ 10,790 | $ 367 |

[1] These amounts are included in investment income on the Consolidated Statements of Income, except for the segregated funds amount which is included in the investment related section of the changes in net assets for segregated funds (note 23).
[2] These amounts are included in accumulated other comprehensive income (loss) on the Consolidated Statements of Financial Position.
[3] For financial 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.
[4] Amounts relate to these unrealized gains (losses) included in investment income for the year.

The Company may hedge positions with offsetting positions that are classified in a different level. For example, the gains and losses for assets and liabilities in the Level 3 category presented in the tables above may not reflect the effect of offsetting gains and losses on hedging instruments that have been classified by the Company in the Level 1 and Level 2 categories.

The 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 year) resulted in reclassifying assets into Level 3. The transfers from Level 3 primarily result from observable market data now being available from the entire term structure of the bond, thus eliminating the need to extrapolate market data beyond observable points.

## Note 12 Long-Term Debt

| As at December 31, | 2012 | 2011 |
|---|---|---|
| 3.40% Senior notes (US$600) | **$ 595** | $ 607 |
| 4.90% Senior notes (US$500) | **494** | 505 |
| 4.079% Medium term notes | **898** | 897 |
| 4.896% Medium term notes | **999** | 998 |
| 7.768% Medium term notes | **598** | 597 |
| 5.161% Medium term notes | **549** | 549 |
| 5.505% Medium term notes | **399** | 399 |
| 4.67% Medium term notes | **350** | 350 |
| 4.448% fixed/floating Senior debentures | **556** | 575 |
| Other notes payable | **14** | 26 |
| **Total long-term debt**[1] | **$ 5,452** | $ 5,503 |
| **Fair value** | **$ 5,899** | $ 5,728 |

[1] Carrying values have been adjusted for those instruments designated as hedged items in fair value hedge relationships.

The fair value of long-term debt is determined using quoted market prices where available. For debt instruments that do not have quoted prices, the fair value is determined with reference to quoted prices of a debt instrument with similar characteristics or utilizing a model to discount cash flows based on current market interest rates.

The cash amount of interest paid during the year ended December 31, 2012 was $269 (2011 – $289). Issue costs are amortized over the term of the debt.

**(a) 3.40% Senior notes**
On September 17, 2010, MFC issued US$600 in 3.40% senior notes which mature September 17, 2015 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt calculated as the sum of the present values of the remaining scheduled payments of principal and interest to be redeemed discounted from their respective scheduled payment dates at the U.S. Government treasury bond yield plus 30 basis points, in each case together with accrued and unpaid interest.

These US$ senior notes have been designated as a hedge of the Company's net investment in its U.S. operations to reduce the earnings volatility that would otherwise arise from the translation of the U.S. denominated debt into Canadian dollars.

**(b) 4.90% Senior notes**
On September 17, 2010, MFC issued US$500 in 4.90% senior notes which mature September 17, 2020 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt calculated as the sum of the present values of the remaining scheduled payments of principal and interest to be redeemed discounted from their respective scheduled payment dates at the U.S. Government treasury bond yield plus 35 basis points, in each case together with accrued and unpaid interest.

These US$ senior notes have been designated as a hedge of the Company's net investment in its U.S. operations to reduce the earnings volatility that would otherwise arise from the translation of the U.S. denominated debt into Canadian dollars.

**(c) 4.079% Medium term notes**
On August 20, 2010, MFC issued $900 in 4.079% medium term notes which mature August 20, 2015 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 46 basis points, in each case together with accrued and unpaid interest.

**(d) 4.896% Medium term notes**
On June 2, 2009, MFC issued $1,000 in 4.896% medium term notes which mature June 2, 2014 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 57.5 basis points, in each case together with accrued and unpaid interest.

**(e) 7.768% Medium term notes**
On April 8, 2009, MFC issued $600 in 7.768% medium term notes which mature April 8, 2019 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 125 basis points, in each case together with accrued and unpaid interest.

**(f) 5.161% Medium term notes**
On June 26, 2008, MFC issued $550 in 5.161% medium term notes which mature June 26, 2015 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 36 basis points, in each case together with accrued and unpaid interest.

**(g) 5.505% Medium term notes**
Also on June 26, 2008, MFC issued $400 in 5.505% medium term notes which mature on June 26, 2018 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 39 basis points, in each case together with accrued and unpaid interest.

**(h) 4.67% Medium term notes**

On March 28, 2006, MFC issued $350 in 4.67% medium term notes which mature March 28, 2013 and are redeemable in whole or in part by MFC at any time at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 11 basis points, in each case together with accrued and unpaid interest.

**(i) 4.448 % fixed/floating senior debentures**

On December 14, 2006, Manulife Finance (Delaware) L.P. ("MFLP"), a wholly owned partnership, issued $550 of senior debentures which mature on December 15, 2026 and bear interest at the rate of 4.448% per annum, payable semi-annually until December 15, 2016 and thereafter at the 90-day Bankers' Acceptance rate plus 1.50%, payable quarterly.

The senior debentures are redeemable in whole or in part, prior to December 15, 2016 at the greater of par or the fair value of the debt based on the yield on Government of Canada bonds plus 14 basis points and on or after December 15, 2016 at par, in each case together with accrued and unpaid interest. Upon certain tax changes, the senior debentures are redeemable as a whole, at the fair market value, together with accrued and unpaid interest.

**(j) Aggregate maturities of long-term debt**

| As at December 31, | 2012 | 2011 |
|---|---|---|
| Less than one year | **$ 350** | $ 12 |
| One to two years | **999** | 350 |
| Two to three years | **2,042** | 998 |
| Three to four years | **–** | 2,053 |
| Four to five years | **14** | – |
| Greater than five years | **2,047** | 2,090 |
| **Total** | **$ 5,452** | $ 5,503 |

## Note 13 Liabilities for Preferred Shares and Capital Instruments

| As at December 31, | 2012 | 2011 |
|---|---|---|
| Preferred shares – Class A Shares, Series 1 | **$ 344** | $ 344 |
| Manulife Financial Capital Securities – Series A | **–** | 60 |
| Manulife Financial Capital Securities – Series B | **–** | 940 |
| Manulife Financial Capital Trust II Notes – Series 1 | **995** | 993 |
| Surplus notes – 7.375% U.S. dollar | **470** | 481 |
| Subordinated debentures – 4.21% fixed/floating Canadian dollar | **548** | 547 |
| Subordinated debentures – 4.165% fixed/floating Canadian dollar | **497** | – |
| Subordinated debentures – 5.059% fixed/floating Canadian dollar | **647** | 647 |
| **Total** | **$ 3,501** | $ 4,012 |
| **Fair value** | **$ 3,811** | $ 4,077 |

The fair value of liability instruments is determined using quoted market prices.

The carrying value of the surplus notes reflects an unamortized fair value increment of US$36 (2011 – US$39), 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.

The cash amount of interest, including dividends on the Class A, Series 1 preferred shares, paid during the year ended December 31, 2012 was $228 (2011 – $238). Issue costs are amortized over the term of the underlying instruments.

**Maturity profile of capital instruments**

There are no scheduled maturities for any of the outstanding capital instruments within the next five years.

**Preferred shares**

On June 19, 2003, MFC issued 14 million Class A Shares, Series 1 ("Series 1 Preferred Shares") at a price of $25.00 per share, for an aggregate amount of $350. The Series 1 Preferred Shares are non-voting and are entitled to non-cumulative preferential cash dividends payable quarterly, if and when declared, at a per annum rate of 4.10%. With regulatory approval, the Series 1 Preferred Shares may be redeemed by MFC, in whole or in part, at declining premiums that range from $1.25 to nil per Series 1 Preferred Share, by either payment of cash or the issuance of MFC common shares. On or after December 19, 2015, the Series 1 Preferred Shares will be convertible at the option of the holder into MFC common shares, the number of which is determined by a prescribed formula, and is subject to the right of MFC prior to the conversion date to redeem for cash or find substitute purchasers for such preferred shares. The prescribed formula is the face amount of the Series 1 Preferred Shares divided by the greater of $2.00 and 95% of the then market price of MFC common shares.

**Manulife Financial Capital Securities**
On December 10, 2001, Manulife Financial Capital Trust (the "Trust"), a wholly owned open-end trust, issued 60,000 Manulife Financial Capital Securities ("MaCS") – Series A that entitled holders to receive cash distributions representing an annual yield of 7% and 940,000 MaCS – Series B that entitled holders to receive cash distributions representing an annual yield of 6.70%. On June 30, 2012, the Trust redeemed all of the outstanding $60 million principal amount of MaCS Series A and all of the outstanding $940 million principal amount of MaCS Series B at par plus unpaid indicated yield accrued to the date of redemption.

The Trust is consolidated in the Company's consolidated financial statements (see note 18).

**Manulife Financial Capital Trust II Notes – Series 1**
On July 10, 2009, Manulife Financial Capital Trust II ("Trust II") issued $1,000 in subordinated notes. The notes mature on December 31, 2108 and interest is payable semi-annually on June 30 and December 31. From July 10, 2009 to December 30, 2019, the rate of interest is 7.405% per annum. 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%.

On or after December 31, 2014, Trust II may redeem the notes, with regulatory approval, in whole or in part, on any day that is not an Interest Reset Date, at the greater of the par or the present value of the debt based on the yield on uncallable Government of Canada bonds plus 1% if the redemption is prior to December 31, 2019, or 2% if the redemption date is after December 31, 2019, in each case together with accrued and unpaid interest. Trust II may redeem the notes, on or after December 31, 2019, with regulatory approval, on an Interest Reset Date at par, together with accrued and unpaid interest.

Trust II is consolidated in the Company's consolidated financial statements (see note 18).

Under certain circumstances, each note will be automatically exchanged, without the consent of the holders, for 40 Class 1 Series 1 MLI preferred shares. The notes constitute Tier I regulatory capital.

**U.S. dollar surplus notes**
On February 25, 1994, John Hancock Mutual Life Insurance Company, now John Hancock Life Insurance Company (U.S.A.), issued US$450 of 7.375% surplus notes maturing on February 15, 2024. 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.

**Subordinated debentures 4.21% fixed/floating Canadian dollar**
On November 18, 2011, MLI issued $550 in subordinated fixed/floating debentures, which mature November 18, 2021. The debentures bear interest at a fixed rate of 4.21% per annum, payable semi-annually for five years and thereafter at the 90-day Bankers' Acceptance rate plus 2.65%, payable quarterly. With regulatory approval, MLI may redeem the debentures, in whole or in part, on or after November 18, 2016, at par, together with accrued and unpaid interest. The subordinated debentures form part of the Company's Tier 2B regulatory capital.

**Subordinated debentures 4.165% fixed/floating Canadian dollar**
On February 17, 2012, MLI issued $500 in subordinated fixed/floating debentures, which mature June 1, 2022. The debentures bear interest at a fixed rate of 4.165% per annum, payable semi-annually for five years and thereafter at the 90-day Bankers' Acceptance rate plus 2.45%, 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. The subordinated debentures form part of the Company's Tier 2B regulatory capital.

**Subordinated debentures 5.059% fixed/floating Canadian dollar**
On December 14, 2006, MFLP issued $650 of subordinated debentures which mature December 15, 2041. The subordinated debentures bear interest at the rate of 5.059% per annum, payable semi-annually until December 15, 2036 and thereafter at the 90-day Bankers' Acceptance rate plus 1%, payable quarterly.

With regulatory approval, MFLP may redeem the subordinated debentures, in whole or in part, at any time prior to December 15, 2036 at the greater of par or the present value of the debt based on the yield on Government of Canada bonds plus 26.5 basis points or on any interest payment date, on or after December 15, 2036 at par, in each case together with accrued and unpaid interest.

Upon certain tax changes, the subordinated debentures are redeemable as a whole, with regulatory approval, at the fair market value, together with accrued and unpaid interest. The subordinated debentures form part of the Company's Tier 2B regulatory capital.

## Note 14 Share Capital

The authorized capital of MFC consists of:

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

**Preferred shares**

On December 4, 2012, MFC issued 8 million Class 1 Shares Series 11 ("Class 1 Series 11 Preferred Shares") at a price of $25 per share, for an aggregate amount of $200. The Class 1 Series 11 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4% until March 19, 2018 after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 2.61%. On March 19, 2018 and on March 19 every five years thereafter, the Class 1 Series 11 Preferred Shares will be convertible at the option of the holder into Class 1 Shares Series 12 ("Class 1 Series 12 Preferred Shares"). The Class 1 Series 12 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 2.61%. Subject to regulatory approval, MFC may redeem Class 1 Series 11 Preferred Shares, in whole or in part, at par, on March 19, 2018 and on March 19 every five years thereafter.

On May 24, 2012, MFC issued 10 million Class 1 Shares Series 9 ("Class 1 Series 9 Preferred Shares") at a price of $25 per share, for an aggregate amount of $250. The Class 1 Series 9 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4.40% until September 19, 2017 after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 2.86%. On September 19, 2017 and on September 19 every five years thereafter, the Class 1 Series 9 Preferred Shares will be convertible at the option of the holder into Class 1 Shares Series 10 ("Class 1 Series 10 Preferred Shares"). The Class 1 Series 10 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 2.86%. Subject to regulatory approval, MFC may redeem Class 1 Series 9 Preferred Shares, in whole or in part, at par, on September 19, 2017 and on September 19 every five years thereafter.

On February 22, 2012, MFC issued 10 million Class 1 Shares Series 7 ("Class 1 Series 7 Preferred Shares") at a price of $25 per share, for an aggregate amount of $250. The Class 1 Series 7 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4.60% until March 19, 2017 after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 3.13%. On March 19, 2017 and on March 19 every five years thereafter, the Class 1 Series 7 Preferred Shares will be convertible at the option of the holder into Class 1 Shares Series 8 ("Class 1 Series 8 Preferred Shares"). The Class 1 Series 8 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 3.13%. Subject to regulatory approval, MFC may redeem Class 1 Series 7 Preferred Shares, in whole or in part, at par, on March 19, 2017 and on March 19 every five years thereafter.

On December 6, 2011, MFC issued 8 million Class 1 Shares Series 5 ("Class 1 Series 5 Preferred Shares") at a price of $25 per share, for an aggregate amount of $200. The Class 1 Series 5 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4.40% until December 19, 2016 after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 2.90%. On December 19, 2016 and on December 19 every five years thereafter, the Class 1 Series 5 Preferred Shares will be convertible at the option of the holder into Class 1 Shares Series 6 ("Class 1 Series 6 Preferred Shares"). The Class 1 Series 6 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 2.90%. Subject to regulatory approval, MFC may redeem Class 1 Series 5 Preferred Shares, in whole or in part, at par, on December 19, 2016 and on December 19 every five years thereafter.

On March 11, 2011, MFC issued 8 million Class 1 Shares Series 3 ("Class 1 Series 3 Preferred Shares") at a price of $25 per share, for an aggregate amount of $200. The Class 1 Series 3 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4.20% until June 19, 2016, after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 1.41%. On June 19, 2016 and on June 19 every five years thereafter, the Class 1 Series 3 Preferred Shares will be convertible at the option of the holder into Class 1 Shares Series 4 ("Class 1 Series 4 Preferred Shares"). The Class 1 Series 4 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 1.41%. Subject to regulatory approval, MFC may redeem Class 1 Series 3 Preferred Shares, in whole or in part, at par, on June 19, 2016 and on June 19 every five years thereafter.

On June 3, 2009, MFC issued 14 million Class 1 Shares Series 1 ("Class 1 Series 1 Preferred Shares") at a price of $25 per share, for an aggregate amount of $350. The Class 1 Series 1 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 5.6% until September 19, 2014, after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 3.23%. On September 19, 2014 and on September 19 every five years thereafter, the Class 1 Series 1 Preferred Shares will be convertible at the option of the holder into Class 1 Shares Series 2 ("Class 1 Series 2 Preferred Shares"). The Class 1 Series 2 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 3.23%. Subject to regulatory approval, MFC may redeem the Class 1 Series 1 Preferred Shares, in whole or in part, at par on September 19, 2014 and on September 19 every five years thereafter.

On March 4, 2009, MFC issued 18 million Class A Shares, Series 4 (“Series 4 Preferred Shares”) at a price of $25 per share, for an aggregate amount of $450. The Series 4 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 6.6% until June 19, 2014, after which the dividend rate will be reset every five years at a rate equal to the five year Government of Canada bond yield plus 4.56%. On June 19, 2014 and on June 19 every five years thereafter, the Series 4 Preferred Shares will be convertible at the option of the holder into Class A Shares, Series 5 (“Series 5 Preferred Shares”). The Series 5 Preferred Shares are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a rate equal to the three month Government of Canada Treasury Bill yield plus 4.56%. Subject to regulatory approval, MFC may redeem the Series 4 Preferred Shares, in whole or in part, at par on June 19, 2014 and on June 19 every five years thereafter.

On January 3, 2006, MFC issued 12 million Class A Shares, Series 3 (“Series 3 Preferred Shares”) at a price of $25 per share, for an aggregate amount of $300. The Series 3 Preferred Shares are non-voting and entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4.50%. With regulatory approval, the Series 3 Preferred Shares may be redeemed by MFC on or after March 19, 2011, in whole or in part, for cash, at declining premiums that range from $1.00 to nil per share.

On February 18, 2005, MFC issued 14 million Class A Shares, Series 2 (“Series 2 Preferred Shares”) at a price of $25 per share, for an aggregate amount of $350. The Series 2 Preferred Shares are non-voting and are entitled to non-cumulative preferential cash dividends, payable quarterly, if and when declared, at a per annum rate of 4.65%. With regulatory approval, the Series 2 Preferred Shares may be redeemed by MFC on or after March 19, 2010, in whole or in part, for cash, at declining premiums that range from $1.00 to nil per share.

**Common shares**

On November 30, 2009, MFC issued 132 million common shares at $19.00 per share. Net cash proceeds, after deducting commissions and fees of the issue, were $2,413. Net proceeds including tax benefits were $2,435.

On December 11, 2008, MFC issued 117 million common shares at $19.40 per share. Net cash proceeds, after deducting commissions and fees of the issue, were $2,190. Net proceeds including tax benefits were $2,208.

On May 7, 2009, MFC announced amendments to its dividend reinvestment and share purchase plans. These plans provide registered common shareholders with a means to automatically reinvest the cash dividends paid on their common shares in the purchase of additional common shares. These plans are open to registered shareholders residing in Canada or the United States. MFC has the flexibility to fund the plans through open market purchases and treasury issuances.

| | **2012** | | 2011 | |
|---|---|---|---|---|
| **For the years ended December 31,** | Number of shares (in millions) | Amount | Number of shares (in millions) | Amount |
| **Common Shares** | | | | |
| Balance, January 1 | **1,801** | **$ 19,560** | 1,778 | $ 19,254 |
| Issued on exercise of stock options and deferred share units | **–** | **–** | – | 2 |
| Issued under dividend reinvestment and share purchase plans | **27** | **326** | 23 | 304 |
| **Total** | **1,828** | **$ 19,886** | 1,801 | $ 19,560 |

On February 6, 2013, the Company’s Board of Directors approved a quarterly dividend of $0.13 per share on the common shares of MFC, payable on and after March 19, 2013 to shareholders of record at the close of business on February 20, 2013.

The Board also declared dividends on the following non-cumulative preferred shares, payable on or after March 19, 2013 to shareholders of record at the close of business on February 20, 2013.

- Class A Shares Series 1 – $0.25625 per share
- Class A Shares Series 2 – $0.29063 per share
- Class A Shares Series 3 – $0.28125 per share
- Class A Shares Series 4 – $0.4125 per share
- Class 1 Shares Series 1 – $0.35 per share
- Class 1 Shares Series 3 – $0.2625 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 – $0.287671 per share

## Note 15 Capital Management

Manulife Financial manages the capital requirements of the Company as a whole as well as at each regulated entity level. Manulife Financial seeks to manage its capital with the objectives of:

- Safeguarding commitments made to policyholders and customers;
- Prudently and effectively deploying the capital invested in the Company;
- Protecting or enhancing the Company’s reputation and brand; and
- Maintaining target financial strength ratings.

The Company's capital adequacy assessment considers expectations of key external stakeholders such as regulators and rating agencies, results of sensitivity testing as well as a comparison to its peers. Our internal capital targets are set above regulatory requirements. The Company monitors against these internal targets and initiates actions appropriate to achieving its business objectives.

Annually the Board of Directors reviews and approves the Company's Capital Management Policy. The policy is integrated with the Company's risk and financial frameworks, and the capital management operational oversight is provided by the Capital Committee, consisting of senior finance and risk management and executives and chaired by the Chief Actuary. The committee reviews issues and initiatives that affect the capital position of MFC's subsidiaries and the Company as a whole.

Each quarter, the Audit Committee reviews the Company's capital position. In addition, the Appointed Actuary discusses with the Board of Directors key sensitivities of the Company's capital ratios as assessed in the context of annual capital planning and Dynamic Capital Adequacy Testing (DCAT) analysis.

As part of its annual DCAT, the Company assesses the strength of its capital position under various stress scenarios. The Company's DCAT typically quantifies the financial impact of economic events arising from shocks in public equity and other markets, interest rates and credit, among others. The 2012 DCAT results demonstrate that the Company has sufficient assets to discharge policy liabilities in the various adverse scenarios tested.

The measure of available capital in the table below serves as the foundation of the Company's capital management activities at the consolidated level. For regulatory capital reporting purposes, the numbers are further adjusted for various additions or deductions to capital as mandated by the guidelines issued by OSFI. The Company remains well within regulatory constraints on the composition of capital between equity and other instruments.

**Consolidated capital**

| As at December 31, | 2012 | 2011 |
|---|---|---|
| Total equity[1] | $ 26,096 | $ 24,879 |
| Less AOCI (loss) on cash flow hedges | (50) | (91) |
| Total equity less AOCI (loss) on cash flow hedges | $ 26,146 | $ 24,970 |
| Liabilities for preferred shares and capital instruments | 3,501 | 4,012 |
| **Total capital** | $ 29,647 | $ 28,982 |

(1) Total equity includes unrealized gains and losses on AFS bonds and AFS equities, net of taxes. Starting in 2009, the current year net unrealized gain or loss on AFS bonds is not part of OSFI regulatory capital. As at December 31, 2012, the gain on AFS bonds, net of taxes, was $312 (2011 – $193).

In 2012, the Company's capital increased by $665 compared to the prior year. The Company issued $700 of preferred shares (see note 14) and $500 of subordinated debentures and redeemed $1,000 of capital notes issued by Manulife Financial Capital Trust (see note 13). Net income of $1,692 increased capital but was partially offset by dividends paid in cash of $733. Other changes included an increase of $262 in unrealized gains on AFS securities and a decrease of $768 as a result of the impact of the strengthened Canadian dollar.

## Note 16 Stock-Based Compensation

Under MFC's Executive Stock Option Plan ("ESOP"), 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. A total of 73,600,000 common shares have been reserved for issuance under the ESOP.

In 2000, MFC granted deferred share units ("DSUs") to certain employees under the ESOP. These DSUs vest 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 these DSUs outstanding was 1.5 million as at December 31, 2012 (2011 – 1.6 million).

In addition, for certain new employees and pursuant to the Company's deferred compensation program, MFC grants DSUs under the ESOP which entitle the holder to receive cash payment equal to the value of the same number of common shares plus credited dividends on retirement or termination of employment. In 2012, the Company granted 21,000 DSUs (2011 – nil) to certain new hires which vest over a maximum period of eight years. In 2012, 16,000 DSUs (2011 – 13,000) were granted to certain employees who elected to defer receipt of all or part of their annual bonus. These DSUs vested immediately. Also, in 2012, 57,000 DSUs (2011 – 49,000) 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.

The fair values of the 0.2 million DSUs issued in the year were $13.51 per unit, as at December 31, 2012 (0.2 million issued at $10.85 per unit on December 31, 2011).

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. MFC matches a percentage of the employee's eligible contributions up to a maximum amount. MFC's contributions vest immediately. All contributions are used to purchase common shares in the open market.

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,** | **2012** | 2011 |
|---|---|---|
| | | Number of DSUs (in thousands) |
| Outstanding, January 1 | **3,010** | 3,098 |
| Issued | **224** | 173 |
| Reinvested | **124** | 121 |
| Redeemed | **(643)** | (382) |
| **Outstanding, December 31** | **2,715** | 3,010 |

Of the DSUs outstanding as at December 31, 2012, 1,472,000 (2011 – 1,580,000) entitle the holder to receive common shares, 625,000 (2011 – 874,000) entitle the holder to receive payment in cash and 618,000 (2011 – 556,000) entitle the holder to receive payment in cash or common shares, at the option of the holder.

MFC previously granted stock options to directors under the Director Equity Incentive Plan ("DEIP"). No stock options were granted under this plan in 2012 or 2011, as a result of a decision made by the Board of Directors in 2004 to permanently discontinue stock option grants to directors. The number of options outstanding under the DEIP was nil as at December 31, 2012 (2011 – 54,000).

For the year ended December 31, 2012, 7.2 million RSUs (2011 – 4.5 million) and 0.8 million PSUs (2011 – 0.6 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 $13.51 per unit, as at December 31, 2012 (2011 – $10.85 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 granted in February 2012 vest on the date that is 34 months from the grant date (December 15, 2014), 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 was $67 for the year ended December 31, 2012 (2011 – $51).

PSUs granted in February 2012 vest on the date that is 34 months from the grant date (December 15, 2014), subject to performance conditions over the performance period. 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 PSUs was $5 for the year ended December 31, 2012 (2011 – $(3)).

| | **2012** | | 2011 | |
|---|---|---|---|---|
| **Options outstanding** | Number of options (in millions) | Weighted average exercise price | Number of options (in millions) | Weighted average exercise price |
| **For the years ended December 31,** | | | | |
| Outstanding, January 1 | **35** | **$ 24.24** | 36 | $ 24.68 |
| Granted | **6** | **$ 12.56** | 4 | $ 18.90 |
| Expired | **(7)** | **$ 25.84** | (4) | $ 23.10 |
| Forfeited | **(2)** | **$ 19.08** | (1) | $ 21.77 |
| **Outstanding, December 31** | **32** | **$ 21.93** | 35 | $ 24.24 |
| **Exercisable, December 31** | **20** | **$ 25.93** | 22 | $ 26.95 |

| | Options outstanding | | | Options exercisable | | |
|---|---|---|---|---|---|---|
| **As at December 31, 2012** | 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) |
| $11.04 – $19.52 | **22** | **$ 16.29** | **7.08** | **9** | **$ 17.25** | **5.65** |
| $19.53 – $25.45 | **2** | **$ 23.49** | **2.51** | **2** | **$ 23.60** | **2.23** |
| $25.46 – $40.38 | **8** | **$ 35.93** | **3.55** | **9** | **$ 35.93** | **3.55** |
| **Total** | **32** | **$ 21.93** | **5.85** | **20** | **$ 25.93** | **4.40** |

The weighted average fair value of each option granted in 2012 has been estimated at $2.78 (2011 – $4.52) using the Black-Scholes option-pricing model. The pricing model uses the following assumptions for these options: risk-free interest rate of 1.5% (2011 – 2.9%), dividend yield of 3.60% (2011 – 3.25%), expected volatility of 32.5% (2011 – 30%) and expected life of 6.7 (2011 – 6.9) years. Expected volatility is estimated by evaluating a number of factors including historical volatility of the share price over multi-year periods.

The stock-based compensation expense recognized is shown in the following table.

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| Expense arising from equity-settled stock-based payment transactions | **$ 17** | $ 23 |
| Expense arising from cash-settled stock-based payment transactions | **72** | 48 |
| **Total stock-based compensation expense** | **$ 89** | $ 71 |

The carrying amount of the liability relating to the cash-settled awards at December 31, 2012 is $53 (2011 – $49) and is included within other liabilities.

**Dilutive effect of stock-based compensation awards**

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| **Diluted earnings per common share** | **$ 0.88** | $ 0.02 |
| Net income available to common shareholders | **$ 1,624** | $ 44 |
| Weighted average number of common shares (in millions) | **1,812** | 1,786 |
| Dilutive stock-based awards[1] (in millions) | **2** | 3 |
| Dilutive convertible instruments[2] (in millions) | **74** | – |
| **Weighted average number of diluted common shares** (in millions) | **1,888** | 1,789 |

[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 were an average of 35 million (2011 – 36 million) anti-dilutive stock-based awards.

[2] The holders of the convertible preferred shares have the right to redeem those instruments for MFC shares prior to the conversion date. The holders of the MaCS Series A and B had the same rights prior to redemption of the MaCS on June 30, 2012. However, these convertible instruments have been excluded from the calculation for the year ended December 31, 2011, as the conversions are anti-dilutive.

## Note 17 Employee Future Benefits

The Company maintains pension plans, both defined contribution and defined benefit, and retiree welfare plans for eligible employees and agents. These plans include broad-based pension plans for employees that are typically funded, as well as supplemental non-registered (non-qualified) pension plans for executives and retiree welfare plans, both of which are typically not funded.

The Company has long recognized the financial exposure associated with traditional defined benefit pension plans (i.e., final average pay plans and annuitized cash balance accounts) and retiree welfare plans. As such, the Company has been closing these plans to new members and, in the case of pension plans, has been replacing them with capital accumulation-type retirement plans. Capital accumulation plans include defined benefit cash balance plans, 401(k) plans and defined contribution plans under which the Company's approach is to allocate a fixed percentage of each employee's eligible earnings taking median market practice into account. To the extent that pension benefits delivered through registered or tax qualified pension plans limit the benefit that would otherwise be provided to executives, the Company may sponsor supplemental arrangements, which are for the most part unfunded.

### Plan characteristics

Most of the Company's traditional defined benefit pension plans and retiree welfare plans are closed. New employees join cash balance or defined contribution pension programs, depending on the geography of employment, and are not eligible to participate in the retiree welfare plans. Reflecting the shift away from traditional defined benefit pension plans to capital accumulation plans, approximately 2% of plan members continue to accrue final average pay benefits. Traditional defined benefit pension obligations comprise approximately 50% of the Company's global pension obligations, due in large part to the inactive and retired members who no longer accrue defined benefit pensions but have not yet been paid their entire pension entitlements.

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 defined benefit pension plans is to make at least the minimum annual contributions required by regulations in the countries in which the plans are offered. Assumptions and methods prescribed for regulatory funding purposes typically differ from those used for accounting purposes. The Company measures its defined benefit obligations and the fair value of plan assets for accounting purposes at December 31st of each year.

The Company has defined benefit pension and/or retiree welfare plan obligations in the U.S., Canada, Japan, U.K., Taiwan and Indonesia. The largest of these are the primary plans for employees in the U.S. and Canada and are considered to be the material plans that are the subject and focus of the disclosures in the balance of this note.

*U.S. Plans*
The Company operates a qualified cash balance plan that is open to new members, a non-qualified cash balance plan, under which accruals ceased as of December 31, 2011, and a retiree welfare plan that was closed to new members in 2005.

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 2013. There are no plan assets set aside for the non-qualified pension cash balance plan; these benefits are to be funded as they come due.

The retiree welfare plan subsidizes the cost of life insurance and medical benefits for eligible retirees. The majority of those who retired after 1991 receive a fixed dollar subsidy from the Company based on service. Employees who met certain age and service criteria by 2002 generally receive access to the plan upon retirement but pay the full cost. While assets have been set aside in a qualified trust to pay a portion of future retiree welfare benefits, this funding is optional. The Company also utilizes federal subsidies from the Medicare program to support its retiree welfare commitments.

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. Nonqualified Plans Subcommittee.

*Canadian Plans*
The Company's defined benefit plans in Canada include a registered final average pay pension plan, a non-registered supplemental final average pay pension arrangement and a retiree welfare plan that was closed to new members in 2005. While both pension programs have been closed to new members since 1998, there remain 742 members under the registered plan who continue to accrue final average pay pensions, but without contractual cost of living adjustments.

Actuarial valuations to determine the Company's minimum funding contributions for the registered plan are required at least once every three years, unless prescribed financial thresholds are not met. Deficits revealed in the funding valuation must generally be funded over a period of up to five years. For 2013, the required funding for this plan is expected to be $21. The supplemental non-registered pension plan is not funded; these benefits are to be funded as they come due.

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

The registered pension plan is governed by the Canadian Pension Committee, while the supplemental non-registered arrangement is governed by the Company's Board of Directors. The retiree welfare plan is governed by management.

**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 salary increase risk is fully transferred to the employee, while interest rate, investment (where applicable) and longevity risks are partially transferred to the employee. Effective with the adoption of IAS 19 (2011) for 2013, all actuarial and investment gains and losses in defined benefit plans that result from actual experience differing from the assumptions made for the noted risks will be immediately recognized in Other Comprehensive Income.

Material sources of risk to the Company for all plans include:
– A decline in discount rates that increases the defined benefit obligations; and
– Lower than expected rates of mortality.

For funded plans, an additional material source of risk is that investment returns do not move in line with the defined benefit obligations due to interest rate changes.

Further, for retiree welfare plans, an additional material source of risk is that health care cost inflation will be higher than expected.

Historically, the Company has managed risks through plan design and eligibility changes which limited the size and growth of the defined benefit obligations. For funded plans, investment risks 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 de-risk the plan as the funded status improves. The target asset allocation for the plan is currently 59% return-seeking assets and 41% liability-hedging assets.

In Canada, internal committees and management review the financial status of the registered defined benefit pension plan at least quarterly. As at December 31, 2012, the target asset allocation for the plan was 30% return-seeking assets and 70% liability-hedging assets. The Company recently adopted a new target investment policy of 10% return-seeking assets and 90% liability-hedging assets, with the intention to fully transition to the new target by 2017.

## Pension and retiree welfare plans

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **For the years ended December 31,** | **2012** | 2011 | **2012** | 2011 |
| Changes in defined benefit obligation: | | | | |
| Ending balance prior year | **$ 3,524** | $ 3,329 | **$ 682** | $ 702 |
| Current service cost | **33** | 37 | **2** | 3 |
| Past service cost | **–** | – | **–** | (38) |
| Interest cost | **149** | 159 | **28** | 33 |
| Plan participants' contributions | **1** | 1 | **5** | 5 |
| Actuarial (gains) losses – experience | **17** | 8 | **(20)** | (3) |
| Actuarial (gains) losses – assumption changes | **175** | 175 | **(33)** | 19 |
| Benefits paid | **(246)** | (242) | **(50)** | (51) |
| Impact of changes in foreign exchange rates | **(57)** | 57 | **(11)** | 12 |
| **Defined benefit obligation, December 31** | **$ 3,596** | $ 3,524 | **$ 603** | $ 682 |

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **For the years ended December 31,** | **2012** | 2011 | **2012** | 2011 |
| Changes in plan assets: | | | | |
| Fair value of plan assets, ending balance prior year | **$ 2,611** | $ 2,580 | **$ 360** | $ 345 |
| Expected return on plan assets | **163** | 176 | **22** | 25 |
| Employer contributions | **99** | 80 | **34** | 46 |
| Plan participants' contributions | **1** | 1 | **5** | 5 |
| Benefits paid | **(246)** | (242) | **(50)** | (51) |
| Actuarial gains (losses) | **190** | (26) | **19** | (18) |
| Impact of changes in foreign exchange rates | **(44)** | 42 | **(8)** | 8 |
| **Fair value of plan assets, December 31** [1] | **$ 2,774** | $ 2,611 | **$ 382** | $ 360 |

[1] The fair value of plan assets does not include the rabbi trust assets that support the non-qualified U.S. retirement plan obligations for certain executives and retired executives in respect of service prior to May 1, 2008. In the event of insolvency of the Company, the rabbi trust assets can be used to satisfy claims of general creditors. At December 31, 2012, assets in the rabbi trust with respect to these defined benefit obligations were $360 (2011 – $351) compared to the defined benefit obligations under the merged plan of $361 (2011 – $360).

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **For the years ended December 31,** | **2012** | 2011 | **2012** | 2011 |
| Deficit (surplus) | **$ 822** | $ 913 | **$ 221** | $ 322 |
| Unrecognized net actuarial gains (losses) | **(825)** | (990) | **23** | (49) |
| Unrecognized prior service credit (cost) | **–** | – | **15** | 19 |
| Effect of asset limit | **–** | – | **–** | – |
| **Net defined benefit (asset) liability** [1] | **$ (3)** | $ (77) | **$ 259** | $ 292 |

[1] The amounts in the table relate only to the material plans. Upon the adoption of the amendments to IAS 19 in 2013, the net defined benefit liability for all Company pension plans will be increased by $872, primarily due to the unrecognized net actuarial losses.

### Amounts recognized in the Consolidated Statements of Financial Position

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **For the years ended December 31,** | **2012** | 2011 | **2012** | 2011 |
| Defined benefit liability | **$ 556** | $ 491 | **$ 259** | $ 292 |
| Defined benefit asset | **(559)** | (568) | **–** | – |
| **Net defined benefit (asset) liability** | **$ (3)** | $ (77) | **$ 259** | $ 292 |

The following disclosures of experience gains and losses will be built up over time to give a five year history.

| | Pension plans | | | Retiree welfare plans | | |
|---|---|---|---|---|---|---|
| **As at and for the years ended December 31,** | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| Defined benefit obligation | **$ 3,596** | $ 3,524 | $ 3,329 | **$ 603** | $ 682 | $ 702 |
| Fair value of plan assets | **2,774** | 2,611 | 2,580 | **382** | 360 | 345 |
| Deficit (surplus) | **$ 822** | $ 913 | $ 749 | **$ 221** | $ 322 | $ 357 |
| Deficit (surplus) is composed of: | | | | | | |
| Funded or partially funded plans | **$ 95** | $ 193 | $ 63 | **$ 87** | $ 174 | $ 188 |
| Unfunded plans | **727** | 720 | 686 | **134** | 148 | 169 |
| | **$ 822** | $ 913 | $ 749 | **$ 221** | $ 322 | $ 357 |
| Experience (gain) loss adjustments on defined benefit obligation | **$ 17** | $ 8 | $ 5 | **$ (20)** | $ (3) | $ (14) |
| Experience (gain) loss adjustment on assets | **$ (190)** | $ 26 | $ (179) | **$ (19)** | $ 18 | $ (17) |

Overall, the Company's funded or partially funded defined benefit pension and retiree welfare plans consist of assets of $3,156 (2011 – $2,971) and obligations of $3,338 (2011 – $3,338). Obligations for unfunded pension plans and retiree welfare benefit plans total $861 (2011 – $868).

The weighted average asset allocation for the Company's funded defined benefit pension plans is as follows.

| | Actual allocation | |
|---|---|---|
| **As at December 31,** | **2012** | 2011 |
| Equity securities[1] | **43%** | 42% |
| Debt securities | **51%** | 51% |
| Real estate | **3%** | 3% |
| Other | **3%** | 4% |
| **Total** | **100%** | 100% |

[1] Included are investments in MFC common shares of $0.2 (2011 – $0.2).

### Net benefit cost

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,** | **2012** | 2011 | **2012** | 2011 |
| Defined benefit current service cost | **$ 33** | $ 37 | **$ 2** | $ 3 |
| Defined contribution current service cost | **51** | 48 | **–** | – |
| Interest cost | **149** | 159 | **28** | 33 |
| Expected return on plan assets | **(163)** | (176) | **(22)** | (25) |
| Past service cost | **–** | – | **(4)** | (19) |
| Amortization of actuarial losses | **151** | 64 | **–** | – |
| **Net benefit cost** | **$ 221** | $ 132 | **$ 4** | $ (8) |

### Assumptions

The weighted average 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.

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **For the years ended December 31,** | **2012** | 2011 | **2012** | 2011 |
| To determine the accrued benefit obligation at end of year: | | | | |
| Discount rate | **3.9%** | 4.5% | **4.0%** | 4.5% |
| Rate of compensation increase | **3.5%** | 3.4% | **2.8%** | 3.0% |
| Initial health care cost trend rate [1] | **n/a** | n/a | **8.1%** | 8.1% |
| To determine the net benefit cost for the year: | | | | |
| Discount rate | **4.5%** | 5.0% | **4.5%** | 5.0% |
| Expected return on plan assets [2] | **6.6%** | 7.1% | **6.5%** | 7.3% |
| Rate of compensation increase | **3.4%** | 3.9% | **3.0%** | 3.3% |
| Initial health care cost trend rate [1] | **n/a** | n/a | **8.1%** | 8.1% |

[1] The health care cost trend rate used to measure the U.S. based retiree welfare obligation was 8.5% grading to 5.0% for 2028 and years thereafter (2011 – 8.5% grading to 5.0% for 2028) and to measure the net benefit cost was 8.5% grading to 5.0% for 2028 and years thereafter (2011 – 8.5% grading to 5.0% for 2028). In Canada, the rate used to measure the retiree welfare obligation was 6.7% grading to 4.8% for 2026 and years thereafter (2011 – 6.8% grading to 4.8% for 2026) and to measure the net benefit cost was 6.8% grading to 4.8% for 2026 and years thereafter (2011 – 6.8% grading to 4.8% for 2026).

[2] The expected return on pension plan assets for U.S. based plans was 7.3% (2011 – 7.8%). Plans based in Canada had an expected return on plan assets of 4.6% (2011 – 5.3%). The expected long-term rate of return is based on the future return expectations in each country for each asset class and on the target asset allocation of the portfolio for each plan.

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 benefit plans are as follows.

| **As at December 31, 2012** | Canada | U.S. |
|---|---|---|
| **Life expectancy (in years) for those currently age 65** | | |
| Males | **19.8** | **20.2** |
| Females | **22.1** | **21.9** |
| **Life expectancy (in years) at age 65 for those currently age 45** | | |
| Males | **21.3** | **21.6** |
| Females | **22.9** | **22.7** |

**Sensitivity of assumptions**

Assumptions adopted can have a significant effect on the obligations and net benefit cost reported for defined benefit pension and retiree welfare benefit plans. The potential impact on the obligations and the annual costs arising from changes in the key assumptions is set out in the following table.

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **As at December 31, 2012** | Obligation | Net benefit cost [1] | Obligation | Net benefit cost |
| Discount rate: | | | | |
| Impact of a 1% increase | **$ (356)** | **$ (12)** | **$ (57)** | **$ (1)** |
| Impact of a 1% decrease | **425** | **8** | **68** | **–** |
| Rate of compensation increase: | | | | |
| Impact of a 0.25% increase | **2** | **1** | **–** | **–** |
| Impact of a 0.25% decrease | **(2)** | **–** | **–** | **–** |
| Health care cost trend rate: | | | | |
| Impact of a 1% increase | **n/a** | **n/a** | **22** | **1** |
| Impact of a 1% decrease | **n/a** | **n/a** | **(19)** | **(1)** |

[1] The amounts reflect the sensitivity of the 2013 net benefit cost determined in accordance with the amendments to IAS 19.

Sensitivity on the cash balance crediting rate has not been provided since expected changes in this assumption do not have a material effect on the Company's consolidated financial statements.

The calculation of the defined benefit obligation is sensitive to the mortality assumptions. As the actuarial estimates of mortality are adjusted in future to reflect expected decreases in mortality, the effect of an increase of one year in life expectancy would be an increase in the defined benefit obligation of $135.

The sensitivities above assume all other assumptions are held constant. In reality one might expect interrelationships between the assumptions.

**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 benefit plans, cash payments directly to beneficiaries in respect of unfunded pension and retiree welfare benefit plans, and cash contributed to defined contribution pension plans, were as follows.

| | Pension plans | | Retiree welfare plans | |
|---|---|---|---|---|
| **For the years ended December 31,** | **2012** | 2011 | **2012** | 2011 |
| Defined benefit plans | **$ 99** | $ 80 | **$ 34** | $ 46 |
| Defined contribution plans | **51** | 48 | **–** | – |
| **Total** | **$ 150** | $ 128 | **$ 34** | $ 46 |

The Company's best estimate of expected cash payments for employee future benefits for the year ending December 31, 2013 is $75 for defined benefit pension plans, $51 for defined contribution pension plans and $24 for retiree welfare benefit plans.

## Note 18 Consolidated Investments

In its capacities as an investor and as an investment manager, the Company has relationships with various types of entities, some of which are considered SPEs. The Company also has relationships with SPEs used to arrange certain of the Company's financings.

Where the Company is deemed to control an SPE, in accordance with IAS 27 and SIC 12, the SPE is consolidated, with interests of other parties classified as either liabilities or non-controlling interests. The Company is deemed to control an SPE where the Company owns the majority of the SPE's voting interests, or has the power to govern the financial and operating policies of the SPE through other means than voting rights and obtains significant benefits from its activities. The Company receives benefits from its relationships with SPEs in the form of fees and investment returns from investment entities, and in the form of advantageous access to capital markets from financing entities.

The Company assesses the materiality of its relationship with the SPE to determine if it obtains significant benefits from the SPE, which require disclosure. This assessment considers the nature of the relationship with the SPE and the materiality of the relationship to the Company as, among other factors, a percentage of total investments, percentage of total net investment income and percentage of total funds under management. For purposes of assessing materiality and disclosing relationships with SPEs, the Company aggregates similar entities.

**(a) Investment entities that are SPEs**

**Investment SPEs that are consolidated in the Company's general fund**

**Timber Companies**

The Company acts as an investment manager of timberland companies and the Company's general fund and segregated funds invest in many of them. In its capacity as investment manager to the timberland companies, the Company earns investment advisory fees, and in the majority of cases earns forestry management fees and is eligible for performance advisory fees. The Company has determined that many of the timber companies are SPEs.

The Company has determined that as at December 31, 2012 and 2011, it has control over one Timber Company which it manages, Hancock Victoria Plantations ("HVP"), based on ownership of majority voting rights via MFC's general and segregated fund ownership interests.

The consolidation of HVP into the Company's general fund as at December 31, 2012 resulted in an increase in other assets of $699 (2011 – $668), an increase in other liabilities of $501 (2011 – $491), an increase in non-controlling interests of $198 (2011 – $177), and an increase in the Company's net income for the year ended December 31, 2012 of $52 (2011 – $13). The Company's maximum exposure to loss as a result of its relationship with HVP is limited to the Company's general fund investment in HVP's capital of $86 (2011 – $79).

**Hancock Mezzanine Funds**

The Company acts as investment manager to a series of four investment funds which invest in mezzanine financing of private companies (collectively, the "Mezzanine Funds"). The Company's general fund and segregated funds invest in the Mezzanine Funds in varying proportions and the Company's general fund coinvests alongside the Mezzanine Funds in the Funds' targeted investments. In its capacity as investment manager to the Mezzanine Funds, the Company earns investment advisory fees. The Company has determined that it has control over the Mezzanine Funds, by virtue of its non-cancelable management contracts with them, and by virtue of its exposure to their investment performance resulting from its general fund and segregated fund investments in them. The Company accounts for other parties' interests in the Mezzanine Funds as liabilities because the Funds have limited lives.

The consolidation of the Mezzanine Funds into the Company's general fund as at December 31, 2012 resulted in an increase in assets of $165 (2011 – $218) and an increase in liabilities of $165 (2011 – $218).

Liabilities and non-controlling interests recognized as a result of consolidating HVP and the Mezzanine Funds do not represent additional claims on the general assets of the Company; rather, they represent claims against the assets recognized as a result of consolidating these entities. Conversely, the assets recognized as a result of consolidating these entities do not represent additional assets which the Company can use to satisfy claims against its general assets; rather, they can only be used to settle the liabilities recognized as a result of consolidating these entities, and provide returns to the non-controlling interest holders.

**Investment SPEs that are not consolidated**

Except as noted above, the Company has determined that it does not have control over any investment entities which are SPEs and in which it invests or which it manages.

The following is a discussion of the investment entities with which the Company has significant relationships.

**Collateralized debt obligation funds**

The Company acts as an investment manager to certain asset-backed investment vehicles, commonly known as collateralized debt obligation funds ("CDOs"). The Company has determined that the CDOs it manages are SPEs. The Company also invests in the debt and/or equity of these CDOs, and in the debt and/or equity of CDOs managed by others. Any net losses of a CDO managed by the Company in excess of the CDO's equity are borne by the debt owners. Owners of securities issued by CDOs that are managed by the Company have no recourse to the Company's assets in the event of default by the CDO. The Company's risk of loss from any CDO that it manages, or in which it invests, or both, is limited to its investment in the CDO, if any. The Company has determined that it does not control any of the CDOs which it both manages and invests in, because its power to govern the financial and operating policies of these CDOs is either restricted or subject to approval by the CDOs' other investors.

The Company's maximum exposure to losses from CDOs managed by the Company is $8 (2011 – $9). This consists entirely of investments in equity.

**Company-managed CDOs**

| As at December 31, | 2012 | 2011 |
|---|---|---|
| **Total assets** | **$ 406** | $ 644 |
| Total debt[1] | **$ 2,019** | $ 2,448 |
| Total other liabilities | **4** | 5 |
| Total liabilities | **$ 2,023** | $ 2,453 |
| Total equity[2] | **(1,617)** | (1,809) |
| **Total liabilities and equity**[3] | **$ 406** | $ 644 |

[1] Declines in debt result from the payoff of senior debt obligations as well as settlement of the debt as part of the liquidation or amortization process of the CDOs.
[2] Declines in assets reflect the payoff, liquidation or amortization process for certain of the CDOs, and also reflect fair value adjustments to investment securities held in these CDOs. Since the CDOs' assets are carried at fair value and their debt is carried at par, declines in the assets' fair values generate negative equity in the CDOs.
[3] Includes the Company's investment in the debt and equity of Company-managed CDOs.

### Low-income housing partnerships

The Company has investments that qualify for low-income housing tax credits ("LIH Partnerships"). These investments are primarily made through real estate limited partnerships or limited liability companies. The Company is usually the sole limited partner or investor member and is not the general partner or managing member in any of the LIH Partnerships. The Company has determined that the LIH Partnerships are SPEs. The Company has determined that it does not control any LIH Partnership because the Company does not have power to govern their financial and operating policies. This power is held by each general partner or managing member who has significant exposure to the economics of their LIH Partnerships.

The Company's maximum exposure to losses from its investments in LIH Partnerships is $321 (2011 – $400). This consists of $282 (2011 – $337) of equity investments, $31 (2011 – $48) of mortgages and $8 (2011 – $15) of outstanding capital commitments.

**LIH Partnerships**[1]

| As at December 31, | 2012 | 2011 |
|---|---|---|
| **Total assets** | **$ 1,153** | $ 1,311 |
| Total debt | **$ 688** | $ 765 |
| Total other liabilities | **114** | 158 |
| Total liabilities | **$ 802** | $ 923 |
| Total equity[1] | **351** | 388 |
| **Total liabilities and equity**[2] | **$ 1,153** | $ 1,311 |

[1] Certain data in the table above is reported with a six to twelve month lag due to the delayed availability of financial statements of the LIH Partnerships.
[2] Includes the Company's investment in the debt and equity of the LIH Partnerships.

### Timber Companies

As mentioned above, the Company acts as a timber investment manager with total timber assets under management of $11 billion, of which $8 billion is organized into Timber Companies. The Company's general fund and segregated funds own $851 and $1 billion of the capital of these Timber Companies, respectively. In its capacity as investment manager to the Timber Companies, the Company earns investment advisory fees and, in the majority of cases, earns forestry management fees and is eligible for performance advisory fees. The Company has determined that many of the Timber Companies are SPEs. With the exception of HVP, mentioned above, the Company has determined that it does not control any Timber Company it manages because it either does not have the power to govern their financial and operating policies, or does not have exposure to their investment returns, or both.

The maximum exposure of the Company's general fund to losses from unconsolidated Timber Companies is $753 (2011 – $405). This consists of $464 (2011 – $119) of equity investments, $271 (2011 – $259) of debt investments and $18 (2011 – $27) of outstanding capital commitments.

**Timber Companies**

| As at December 31, | 2012 | 2011 |
|---|---|---|
| **Total assets** | **$ 6,522** | $ 4,907 |
| Total debt | **$ 2,255** | $ 2,124 |
| Total other liabilities | **437** | 401 |
| Total liabilities | **$ 2,692** | $ 2,525 |
| Total equity | **3,830** | 2,382 |
| **Total liabilities and equity**[1] | **$ 6,522** | $ 4,907 |

[1] Includes the Company's general fund and segregated fund investments in the debt and equity of the Timber Companies.

### Other entities

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 energy investment partnerships, investment funds organized as limited partnerships and investments in businesses that have undergone debt restructurings and reorganizations. The Company believes that its relationships with these Other Entities are not significant and, accordingly, does not provide any summary financial data for them nor does the Company distinguish here whether each is an SPE or not. The Company's maximum exposure to losses as a result of its involvement with Other Entities is generally limited to amounts invested, which are included on the Company's Consolidated Statements of Financial Position in the appropriate investment categories, but also includes investment amounts committed.

### (b) Financing entities that are SPEs

**Financing SPEs that are consolidated in the Company's general fund**
The Company has determined that it controls each financing entity below. The Company has control over them because the Company predetermined their financial and operating policies and controls any new issuances or redemptions (within contractual limits of relevant agreements) of capital through them, and the Company obtains benefits from them in the form of advantageous access to capital markets. Each is an SPE because its operations are narrowly limited to issuing and servicing the Company's capital.

**Manulife Financial Capital Trust**
The Trust, an open-end trust, issued $1,000 of Manulife Financial Capital Securities ("MaCS"). The Trust redeemed the MaCS on June 30, 2012. See note 13. The consolidation of the Trust into the Company's general fund as at December 31, 2012 and 2011 resulted in no quantitative changes to the Company's assets, liabilities or equity.

**Manulife Financial Capital Trust II**
Trust II, an open-end trust, issued $1,000 of notes to the capital markets. See note 13. The consolidation of Trust II into the Company's general fund as at December 31, 2012 and 2011 resulted in no quantitative changes to the Company's assets, liabilities or equity.

**Manulife Finance (Delaware), L.P.**
MFLP issued $1,200 of debentures. See notes 12 and 13. The consolidation of MFLP into the Company's general fund as at December 31, 2012 resulted in an increase in assets of $3 (2011 – $21), and an increase in liabilities of $3 (2011 – $21).

**Platinum Canadian Mortgage Trust**
Platinum Canadian Mortgage Trust ("Platinum Trust") was organized in 2010 by Manulife Bank of Canada to provide financing for the Company's mortgage business by securitizing certain of the Company's Home Equity Lines of Credit and issuing notes. As at December 31, 2012, Platinum Trust has $1,250 of notes (2011 – $750) outstanding. Transfers of mortgage loans to Platinum Trust do not qualify as sales, therefore, the transferred mortgages and corresponding secured borrowing liabilities are recorded on the Company's Consolidated Statements of Financial Position. See note 4(i).

The consolidation of Platinum Trust into the Company's general fund as at December 31, 2012 resulted in a decrease in assets of $2 (2011 – $3) and a decrease in liabilities of $2 (2011 – $3).

**John Hancock Global Funding II, Ltd.**
John Hancock Global Funding II, Ltd. ("JHGF II"), a Delaware Trust, was organized by John Hancock Life Insurance Company (U.S.A.) ("JHUSA"). JHGF II issued medium term notes to investors worldwide, and used the proceeds to purchase funding agreements issued by JHUSA. The medium term notes were issued through 2005 and mature through 2015. They are not redeemable at the option of the investors. See note 9.

The consolidation of JHGF II into the Company's general fund as at December 31, 2012 resulted in an increase in assets of $35 (2011 – $65), an increase in liabilities of $15 (2011 – $37) and an increase in equity of $20 (2011 – $28).

## Note 19 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 naming the Company as a defendant ordinarily involve its activities as a provider of insurance protection and wealth management products, as well as an investment adviser, employer and taxpayer. In addition, government and regulatory bodies in Canada, the United States and Asia 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.

A class action covering Quebec residents only is pending in Quebec against the Company and a proposed class action lawsuit against the Company has been filed in Ontario on behalf of investors in Canada (except for Quebec residents). The actions in Ontario and Quebec are 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.

The Company believes that its disclosure satisfied applicable disclosure requirements and intends to vigorously defend itself against any claims based on these allegations. Due to the nature of these proceedings, it is not practicable to provide an estimate of the financial effect of these proceedings, an indication of the uncertainties relating to the amount or timing of any outflow, nor the possibility of any reimbursement.

### (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 $2,965 (2011 – $3,431) of outstanding investment commitments as at December 31, 2012, of which $269 (2011 – $373) mature in 30 days, $1,151 (2011 – $1,513) mature in 31 to 365 days and $1,545 (2011 – $1,545) 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 subsidiaries of MFC. As at December 31, 2012, letters of credit for which third parties are beneficiary, in the amount of $84 (2011 – $82), were outstanding.

### (d) Guarantees

**Guarantees regarding Manulife Finance (Delaware), L.P.**

MFC has guaranteed the payment of amounts on the $550 senior debentures due December 15, 2026 and $650 subordinated debentures due December 15, 2041 issued by MFLP, a wholly owned partnership.

**Guarantees regarding The Manufacturers Life Insurance Company**

On January 29, 2007, MFC provided a subordinated guarantee 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. On November 18, 2011, MFC provided a subordinated guarantee of the subordinated debentures issued by MLI on November 18, 2011. On February 17, 2012, MFC provided a subordinated guarantee of the $500 subordinated debentures issued by MLI on February 17, 2012.

The following table sets forth certain condensed consolidating financial information for MFC.

| For the year ended December 31, 2012 | MFC (Guarantor) | Manulife Finance (Delaware), L.P. | MLI Consolidated | Other Subsidiaries of MFC on a Combined Basis | Consolidating Adjustments | Total Consolidated Amounts |
|---|---|---|---|---|---|---|
| **Total revenue** | **$ 374** | **$ 65** | **$ 29,157** | **$ 2,286** | **$ (1,950)** | **$ 29,932** |
| **Net income (loss) attributed to shareholders** | **1,736** | **5** | **1,782** | **(167)** | **(1,620)** | **1,736** |
| **For the year ended December 31, 2011** | | | | | | |
| Total revenue | $ 328 | $ 60 | $ 49,753 | $ 4,248 | $ (3,406) | $ 50,983 |
| Net income (loss) attributed to shareholders | 129 | (6) | 256 | (182) | (68) | 129 |
| **As at December 31, 2012** | | | | | | |
| **Invested assets** | **$ 22** | **$ 2** | **$ 226,247** | **$ 3,657** | **$ –** | **$ 229,928** |
| **Total other assets** | **31,210** | **1,613** | **58,779** | **9,887** | **(53,346)** | **48,143** |
| **Segregated funds net assets** | **–** | **–** | **207,985** | **–** | **–** | **207,985** |
| **Insurance contract liabilities** | **–** | **–** | **198,671** | **12,334** | **(11,417)** | **199,588** |
| **Investment contract liabilities** | **–** | **–** | **2,424** | **–** | **–** | **2,424** |
| **Segregated funds net liabilities** | **–** | **–** | **207,985** | **–** | **–** | **207,985** |
| **Total other liabilities** | **5,783** | **1,463** | **53,419** | **440** | **(11,142)** | **49,963** |
| **As at December 31, 2011** | | | | | | |
| Invested assets | $ 58 | $ 7 | $ 222,958 | $ 3,497 | $ – | $ 226,520 |
| Total other assets | 29,863 | 1,631 | 49,325 | 9,323 | (50,618) | 39,524 |
| Segregated funds net assets | – | – | 195,933 | – | – | 195,933 |
| Insurance contract liabilities | – | – | 189,359 | 11,642 | (10,635) | 190,366 |
| Investment contract liabilities | – | – | 2,540 | – | – | 2,540 |
| Segregated funds net liabilities | – | – | 195,933 | – | – | 195,933 |
| Total other liabilities | 5,706 | 1,491 | 51,095 | 507 | (10,540) | 48,259 |

**Guarantees regarding John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York**

Details of guarantees regarding certain securities issued or to be issued by JHUSA and John Hancock Life Insurance Company of New York are outlined in note 24.

### (e) Pledged assets

In the normal course of business, certain of MFC's subsidiaries pledge their 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 the net exposure moves to an asset position due to market value changes.

The amounts pledged were as follows.

| As at December 31, | 2012 Bonds | 2012 Other | 2011 Bonds | 2011 Other |
|---|---|---|---|---|
| In respect of: | | | | |
| Derivatives | **$ 2,154** | **$ 14** | $ 2,723 | $ 14 |
| Regulatory requirements | **229** | **57** | 219 | 58 |
| Real estate | **–** | **174** | – | 187 |
| Repurchase agreements | **629** | **–** | 656 | – |
| Non-registered retirement plans in trust | **–** | **380** | – | 374 |
| Other | **2** | **6** | 2 | – |
| **Total** | **$ 3,014** | **$ 631** | $ 3,600 | $ 633 |

### (f) Lease obligations

The Company has a number of operating lease obligations, primarily for the use of office space. The future minimum lease payments by year and in aggregate, under non-cancelable operating leases, are presented below.

| | |
|---|---|
| 2013 | **$ 135** |
| 2014 | **106** |
| 2015 | **80** |
| 2016 | **42** |
| 2017 | **21** |
| Thereafter | **372** |
| **Total minimum lease payments** | **$ 756** |

### (g) Restrictions on dividends and capital distributions

Dividends and capital distributions are restricted under the 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.

The ICA requires Canadian non-operating insurance companies to maintain, at all times, adequate levels of capital which are assessed by comparing capital available to a risk metric in accordance with Capital Regime for Regulated Insurance Holding Companies and Non-Operating Life Companies, issued by OSFI. OSFI expects holding companies to manage their capital in a manner commensurate with the group risk profile and control environment. See note 15.

Regulated subsidiaries of MFC must also maintain minimum levels of capital. Such amounts of capital are based on the local capital regime and the statutory accounting basis in each jurisdiction. The most significant of these are the Minimum Continuing Capital and Surplus Requirements for MFC's Canadian insurance subsidiaries and the Risk Based Capital requirements for MFC's U.S. insurance subsidiaries. The Company maintains capital in excess of the minimum required in all jurisdictions.

There are additional restrictions on shareholder dividend distributions in foreign jurisdictions. In the U.S., MFC's principal U.S. insurance subsidiary JHUSA is domiciled in the state of Michigan. Michigan regulatory approval is required if a shareholder dividend distribution from a Michigan insurance subsidiary would exceed that subsidiary's earned regulatory surplus. Regulatory approval is also required if the distribution (together with other distributions during the previous 12 months) exceeds the greater of the subsidiary's statutory net operating income for the previous year and 10 per cent of its surplus determined at the end of the previous year. The determination must be made in accordance with statutory accounting principles. In addition, Michigan law requires that notification be given to the local insurance commissioner no later than five days following declaration, and at least 10 days prior to payment, of any dividend or distribution.

### (h) 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 the 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 20 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:

***Protection (U.S., Asia and Canadian 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 Management (U.S., Asia and Canadian Divisions).*** Offers annuities, pension contracts, and mutual fund products and services. These businesses also offer a variety of retirement products to group benefit plans. Annuity contracts provide non-guaranteed, partially guaranteed and fully guaranteed investment options through general and separate account products. The Canadian Wealth Management business also includes Manulife Bank, which offers a variety of deposit and credit products to Canadian customers. 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.

***Corporate and Other Segment.*** Comprised of the Investment Division's external asset management business, earnings on assets backing capital, net of amounts allocated to operating divisions, changes in actuarial methods and assumptions, the property and casualty and run-off reinsurance operations and other non-operating items.

Effective January 1, 2012, the Company combined its U.S. Insurance and U.S. Wealth Management segments into one reportable segment, the U.S. Division. This change was made to better align with the management of the division. Prior periods have been restated to conform to this presentation.

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 income statement impact of changes in actuarial methods and assumptions (note 8) and the income statement impact of the goodwill impairment charge (note 7) are reported in the Corporate and Other segment.

| **By segment**<br>**As at and for the year ended December 31, 2012** | Asia Division | Canadian Division | U.S. Division | Corporate and Other | Total |
|---|---|---|---|---|---|
| **Revenue** | | | | | |
| **Premium income** | | | | | |
| Life and health insurance | **$ 6,286** | **$ 3,056** | **$ 5,521** | **$ 98** | **$ 14,961** |
| Annuities and pensions | **1,298** | **543** | **1,161** | **–** | **3,002** |
| **Net premium income prior to FDA coinsurance** | **$ 7,584** | **$ 3,599** | **$ 6,682** | **$ 98** | **$ 17,963** |
| Premiums ceded relating to FDA coinsurance (note 8) | **–** | **–** | **(7,229)** | **–** | **(7,229)** |
| Net investment income | **2,328** | **3,852** | **6,615** | **(953)** | **11,842** |
| Other revenue | **717** | **2,778** | **3,637** | **224** | **7,356** |
| **Total revenue** | **$ 10,629** | **$ 10,229** | **$ 9,705** | **$ (631)** | **$ 29,932** |
| **Contract benefits and expenses** | | | | | |
| Life and health insurance | **$ 5,851** | **$ 4,710** | **$ 8,363** | **$ 2,348** | **$ 21,272** |
| Annuities and pensions | **375** | **1,089** | **(4,993)** | **–** | **(3,529)** |
| **Net benefits and claims** | **$ 6,226** | **$ 5,799** | **$ 3,370** | **$ 2,348** | **$ 17,743** |
| Interest expense | **69** | **374** | **66** | **458** | **967** |
| Goodwill impairment | **–** | **–** | **–** | **200** | **200** |
| Other expenses | **2,181** | **3,067** | **3,825** | **780** | **9,853** |
| **Total contract benefits and expenses** | **$ 8,476** | **$ 9,240** | **$ 7,261** | **$ 3,786** | **$ 28,763** |
| Income (loss) before income taxes | **$ 2,153** | **$ 989** | **$ 2,444** | **$ (4,417)** | **$ 1,169** |
| Income tax recovery (expense) | **(94)** | **21** | **(533)** | **1,129** | **523** |
| **Net income (loss)** | **$ 2,059** | **$ 1,010** | **$ 1,911** | **$ (3,288)** | **$ 1,692** |
| Less net income (loss) attributed to: | | | | | |
| Participating policyholders | **56** | **(159)** | **–** | **–** | **(103)** |
| Non-controlling interests | **34** | **–** | **–** | **25** | **59** |
| **Net income (loss) attributed to shareholders** | **$ 1,969** | **$ 1,169** | **$ 1,911** | **$ (3,313)** | **$ 1,736** |
| **Total assets** | **$ 63,256** | **$ 130,190** | **$ 271,477** | **$ 21,133** | **$ 486,056** |

| By segment<br>As at and for the year ended December 31, 2011 | Asia Division | Canadian Division | U.S. Division | Corporate and Other | Total |
|---|---|---|---|---|---|
| **Revenue** | | | | | |
| **Premium income** | | | | | |
| Life and health insurance | $ 4,994 | $ 3,164 | $ 5,662 | $ 366 | $ 14,186 |
| Annuities and pensions | 840 | 730 | 1,748 | – | 3,318 |
| **Net premium income** | $ 5,834 | $ 3,894 | $ 7,410 | $ 366 | $ 17,504 |
| Net investment income | 1,705 | 6,055 | 17,428 | 1,049 | 26,237 |
| Other revenue | 889 | 1,993 | 3,577 | 783 | 7,242 |
| **Total revenue** | $ 8,428 | $ 11,942 | $ 28,415 | $ 2,198 | $ 50,983 |
| **Contract benefits and expenses** | | | | | |
| Life and health insurance | $ 4,816 | $ 4,349 | $ 15,000 | $ 2,150 | $ 26,315 |
| Annuities and pensions | 1,630 | 3,087 | 8,757 | – | 13,474 |
| **Net benefits and claims** | $ 6,446 | $ 7,436 | $ 23,757 | $ 2,150 | $ 39,789 |
| Interest expense | 70 | 383 | 105 | 691 | 1,249 |
| Goodwill impairment | – | – | – | 665 | 665 |
| Other expenses | 1,873 | 2,909 | 3,768 | 582 | 9,132 |
| **Total contract benefits and expenses** | $ 8,389 | $ 10,728 | $ 27,630 | $ 4,088 | $ 50,835 |
| Income (loss) before income taxes | $ 39 | $ 1,214 | $ 785 | $ (1,890) | $ 148 |
| Income tax recovery (expense) | (120) | (148) | (164) | 529 | 97 |
| **Net income (loss)** | $ (81) | $ 1,066 | $ 621 | $ (1,361) | $ 245 |
| Less net income (loss) attributed to: | | | | | |
| Participating policyholders | (50) | 139 | – | – | 89 |
| Non-controlling interests | 17 | – | – | 10 | 27 |
| **Net income (loss) attributed to shareholders** | $ (48) | $ 927 | $ 621 | $ (1,371) | $ 129 |
| **Total assets** | $ 60,315 | $ 119,608 | $ 258,137 | $ 23,917 | $ 461,977 |

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<br>For the year ended December 31, 2012 | Asia | Canada | United States | Other | Total |
|---|---|---|---|---|---|
| **Revenue** | | | | | |
| **Premium income** | | | | | |
| Life and health insurance | **$ 6,341** | **$ 2,590** | **$ 5,528** | **$ 502** | **$ 14,961** |
| Annuities and pensions | **1,298** | **543** | **1,161** | **–** | **3,002** |
| **Net premium income prior to FDA coinsurance** | **$ 7,639** | **$ 3,133** | **$ 6,689** | **$ 502** | **$ 17,963** |
| Premiums ceded relating to FDA coinsurance (note 8) | **–** | **–** | **(7,229)** | **–** | **(7,229)** |
| Net investment income | **1,655** | **3,783** | **6,336** | **68** | **11,842** |
| Other revenue | **750** | **2,786** | **3,814** | **6** | **7,356** |
| **Total revenue** | **$ 10,044** | **$ 9,702** | **$ 9,610** | **$ 576** | **$ 29,932** |

| **For the year ended December 31, 2011** | | | | | |
|---|---|---|---|---|---|
| **Revenue** | | | | | |
| **Premium income** | | | | | |
| Life and health insurance | $ 5,041 | $ 2,721 | $ 5,890 | $ 534 | $ 14,186 |
| Annuities and pensions | 840 | 730 | 1,748 | – | 3,318 |
| **Net premium income** | $ 5,881 | $ 3,451 | $ 7,638 | $ 534 | $ 17,504 |
| Net investment income | 2,152 | 6,223 | 17,765 | 97 | 26,237 |
| Other revenue | 968 | 2,039 | 4,127 | 108 | 7,242 |
| **Total revenue** | $ 9,001 | $ 11,713 | $ 29,530 | $ 739 | $ 50,983 |

## Note 21 Related Parties

### (a) Transactions with related parties

A number of the entities as disclosed in note 22 transacted with the Company during the reporting year in transactions made in the normal course of business. All related party transactions have taken place at terms that would exist in arm's length transactions.

**(b) Compensation of key management personnel**

Key management personnel of the Company are those that 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, | 2012 | 2011 |
|---|---|---|
| Short-term employee benefits | **$ 23** | $ 19 |
| Post-employment benefits | **2** | 2 |
| Share-based payments | **23** | 20 |
| Termination benefits | **1** | – |
| Other long-term benefits | **2** | 1 |
| **Total** | **$ 51** | $ 42 |

## Note 22 Subsidiaries

The following is a list of the directly and indirectly held major operating subsidiaries of Manulife Financial Corporation.

| As at December 31, 2012 | Ownership Percentage | Address | Description |
|---|---|---|---|
| **The Manufacturers Life Insurance Company** | 100 | 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 | 100 | Calgary, Canada | Holding company |
| John Hancock Financial Corporation | 100 | Wilmington, Delaware, U.S.A. | Holding company |
| The Manufacturers Investment Corporation | 100 | Michigan, U.S.A. | Holding company |
| John Hancock Life Insurance Company (U.S.A.) | 100 | Michigan, U.S.A. | U.S. life insurance company licensed in all states, except New York |
| John Hancock Subsidiaries LLC | 100 | Wilmington, Delaware, U.S.A. | Holding company |
| John Hancock Financial Network, Inc. | 100 | Boston, Massachusetts, U.S.A. | Financial services distribution organization |
| The Berkeley Financial Group, LLC | 100 | Boston, Massachusetts, U.S.A. | Holding company |
| John Hancock Advisers, LLC | 100 | Boston, Massachusetts, U.S.A. | Investment advisor |
| John Hancock Funds, LLC | 100 | Boston, Massachusetts, U.S.A. | U.S. broker-dealer |
| Hancock Natural Resource Group, Inc. | 100 | Boston, Massachusetts, U.S.A. | Manager of globally diversified timberland and agricultural portfolios for public and corporate pension plans, high net-worth individuals, foundations and endowments |
| John Hancock Life Insurance Company of New York | 100 | New York, U.S.A. | U.S. life insurance company licensed in New York |
| John Hancock Investment Management Services, LLC | 100 | Boston, Massachusetts, U.S.A. | Investment advisor |
| John Hancock Life & Health Insurance Company | 100 | Boston, Massachusetts, U.S.A. | U.S. life insurance company licensed in all states |
| John Hancock Distributors LLC | 100 | Delaware, U.S.A. | U.S. broker-dealer |
| John Hancock Insurance Agency, Inc. | 100 | Delaware, U.S.A. | U.S. insurance agency |
| Manulife Reinsurance Limited | 100 | Hamilton, Bermuda | Provides life and financial reinsurance primarily to affiliated MFC companies |
| Manulife Reinsurance (Bermuda) Limited | 100 | Hamilton, Bermuda | Provides full risk annuity and life financial reinsurance primarily to affiliated MFC companies |
| Manulife Bank of Canada | 100 | Waterloo, Canada | Provides integrated banking products and service options not available from an insurance company |
| Manulife Canada Ltd. | 100 | Waterloo, Canada | Canadian life insurance, accident and sickness insurance company |
| FNA Financial Inc. | 100 | Toronto, Canada | Holding company |
| Manulife Asset Management Limited | 100 | Toronto, Canada | Investment counseling, portfolio and mutual fund management in Canada |
| First North American Insurance Company | 100 | Toronto, Canada | Canadian property and casualty insurance company |
| NAL Resources Management Limited | 100 | Calgary, Canada | Management company for oil and gas properties |

| As at December 31, 2012 | Ownership Percentage | Address | Description |
|---|---|---|---|
| Manulife Securities Investment Services Inc. | 100 | Burlington, Canada | Mutual fund dealer for Canadian operations |
| Manulife Holdings (Bermuda) Limited | 100 | Hamilton, Bermuda | Holding company |
| Manufacturers P&C Limited | 100 | St. Michael, Barbados | Provides property, casualty and financial reinsurance |
| Manulife Financial Asia Limited | 100 | Hong Kong, China | Holding company |
| Manulife (Cambodia) PLC | 100 | Phnom Penh, Cambodia | Cambodian life insurance company |
| Manufacturers Life Reinsurance Limited | 100 | St. Michael, Barbados | Provides life and financial reinsurance |
| Manulife (Vietnam) Limited | 100 | Ho Chi Minh City, Vietnam | Vietnamese life insurance company |
| Manulife Asset Management (Vietnam) Company Ltd. | 100 | Ho Chi Minh City, Vietnam | Vietnamese fund management company |
| Manulife International Holdings Limited | 100 | Hong Kong, China | Holding company |
| Manulife (International) Limited | 100 | Hong Kong, China | Life insurance company serving Hong Kong and Taiwan |
| Manulife-Sinochem Life Insurance Co. Ltd. | 51 | Shanghai, China | Chinese life insurance company |
| Manulife Asset Management International Holdings Limited | 100 | St. Michael, Barbados | Holding company |
| Manulife Asset Management (Hong Kong) Limited | 100 | Hong Kong, China | Hong Kong investment management and advisory company marketing mutual funds |
| Manulife Asset Management (Taiwan) Co., Ltd. | 100 | Taipei, Taiwan | Asset management company |
| Manulife Life Insurance Company | 100 | Tokyo, Japan | Japanese life insurance company |
| Manulife Asset Management (Japan) Limited | 100 | Tokyo, Japan | Japanese investment management and advisory company |
| Manulife Investments Japan Limited | 100 | Tokyo, Japan | Investment management, securities offering and private placement |
| Manulife Insurance (Thailand) Public Company Limited | 95.1 | Bangkok, Thailand | Thai life insurance company |
| Manulife Asset Management (Thailand) Company Limited | 95.1 | Bangkok, Thailand | Investment management |
| Manulife Holdings Berhad | 59.4 | Kuala Lumpur, Malaysia | Holding company |
| Manulife Insurance Berhad | 59.4 | Kuala Lumpur, Malaysia | Malaysian life insurance company |
| Manulife Asset Management Services Berhad | 59.4 | Kuala Lumpur, Malaysia | Asset management company |
| Manulife (Singapore) Pte. Ltd. | 100 | Singapore | Singaporean life insurance company |
| Manulife Asset Management (Singapore) Pte. Ltd. | 100 | Singapore | Asset management company |
| The Manufacturers Life Insurance Co. (Phils.), Inc. | 100 | Manila, Philippines | Filipino life insurance company |
| PT Asuransi Jiwa Manulife Indonesia | 100 | Jakarta, Indonesia | Indonesian life insurance company |
| PT Manulife Aset Manajemen Indonesia | 100 | Jakarta, Indonesia | Indonesian investment management and advisory company marketing mutual funds |
| Manulife Asset Management (Europe) Holdings Limited | 100 | London, England | Holding company |
| Manulife Asset Management (Europe) Limited | 100 | London, England | Investment management company for Manulife Financial's international funds |
| EIS Services (Bermuda) Limited | 100 | Hamilton, Bermuda | Investment holding company |
| Berkshire Insurance Services Inc. | 100 | Toronto, Canada | Investment holding company |
| JH Investments (Delaware) LLC | 100 | Boston, Massachusetts, U.S.A. | Investment holding company |
| Manulife Securities Incorporated | 100 | Burlington, Canada | Investment dealer |
| Manulife Asset Management (North America) Limited | 100 | Toronto, Canada | Investment advisor |
| Regional Power Inc. | 83.5 | Mississauga, Canada | Developer and operator of hydro-electric power projects |
| **John Hancock Reassurance Company Ltd.** | 100 | Hamilton, Bermuda | Provides annuity, life and long-term care reinsurance primarily to affiliated MFC companies |

## Note 23 Segregated Funds

### Net Assets

| As at December 31, | 2012 | 2011 |
|---|---|---|
| **Investments, at market value** | | |
| Cash and short-term securities | **$ 2,075** | $ 1,888 |
| Bonds | **1,088** | 1,000 |
| Stocks and mutual funds | **202,751** | 190,926 |
| Other investments | **2,379** | 2,430 |
| Accrued investment income | **77** | 75 |
| Other liabilities, net | **(219)** | (261) |
| **Total segregated funds net assets** | **$ 208,151** | $ 196,058 |
| **Composition of segregated fund net assets** | | |
| Held by policyholders | **$ 207,985** | $ 195,933 |
| Held by the Company | **166** | 125 |
| **Total segregated funds net assets** | **$ 208,151** | $ 196,058 |

### Changes in Net Assets

| For the years ended December 31, | 2012 | 2011 |
|---|---|---|
| **Net policyholder cash flow** | | |
| Deposits from policyholders | **$ 22,993** | $ 21,689 |
| Net transfers to general fund | **(718)** | (299) |
| Payments to policyholders | **(24,546)** | (21,740) |
| | **$ (2,271)** | $ (350) |
| **Investment related** | | |
| Interest and dividends | **$ 6,049** | $ 5,176 |
| Net realized and unrealized investment gains (losses) | **16,976** | (8,379) |
| | **$ 23,025** | $ (3,203) |
| **Other** | | |
| Management and administration fees | **$ (3,492)** | $ (3,367) |
| Impact of changes in foreign exchange rates | **(5,169)** | 3,858 |
| | **$ (8,661)** | $ 491 |
| Net additions (deductions) | **$ 12,093** | $ (3,062) |
| Segregated funds net assets, beginning of year | **196,058** | 199,120 |
| **Segregated funds net assets, end of year** | **$ 208,151** | $ 196,058 |

## Note 24 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.) and Fixed Investments in Deferred Annuity Contracts to be Issued by John Hancock Life Insurance Company of New York

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 and John Hancock Life Insurance Company of New York ("JHNY") 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 registration statements of MFC and its subsidiaries that are described below and which relate to MFC's guarantee of certain securities to be issued by its subsidiaries.

JHUSA sells 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 and JHNY may also sell MVAs.

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 obligations of JHUSA and JHNY under the MVAs and of JHUSA 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 and the MVAs issued by JHNY are collectively referred to in this note as the “Guaranteed Securities”. Each of JHUSA and JHNY 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 MVAs issued by JHNY 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 the MVAs issued by JHNY or a Massachusetts court on guarantees of the MVAs issued or assumed by JHUSA.

MFC is a holding company. The assets of MFC consist primarily of the outstanding capital stock of its subsidiaries and investments in other international subsidiaries. MFC’s cash flows primarily consist of dividends and interest payments from its operating subsidiaries, offset by expenses and shareholder dividends and stock repurchases for MFC. 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 19(g).

In the United States, insurance laws in Michigan, New York, Massachusetts and Vermont, the jurisdictions in which certain U.S. insurance company subsidiaries of MFC are domiciled, impose general limitations on the payment of dividends and other upstream distributions or loans by these insurance subsidiaries. These limitations are also described in note 19(g).

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 Consolidating Statement of Financial Position

| As at December 31, 2012 | Manulife Financial Corporation (Guarantor) | John Hancock Life Insurance Company (U.S.A.) (Issuer) | John Hancock Life Insurance Company of New York (Issuer) | Other Subsidiaries | Consolidation Adjustments | Consolidated Manulife Financial Corporation |
|---|---|---|---|---|---|---|
| **Assets** | | | | | | |
| Invested assets | **$ 22** | **$ 87,557** | **$ 8,505** | **$ 134,390** | **$ (546)** | **$ 229,928** |
| Investments in unconsolidated subsidiaries | **30,806** | **3,998** | **1** | **11,423** | **(46,228)** | **–** |
| Reinsurance assets | **–** | **29,320** | **2,848** | **3,937** | **(17,424)** | **18,681** |
| Other assets | **404** | **21,270** | **1,084** | **27,079** | **(20,375)** | **29,462** |
| Segregated funds net assets | **–** | **127,717** | **7,638** | **74,701** | **(2,071)** | **207,985** |
| **Total assets** | **$ 31,232** | **$ 269,862** | **$ 20,076** | **$ 251,530** | **$ (86,644)** | **$ 486,056** |
| **Liabilities and equity** | | | | | | |
| Insurance contract liabilities | **$ –** | **$ 107,585** | **$ 6,980** | **$ 103,077** | **$ (18,054)** | **$ 199,588** |
| Investment contract liabilities | **–** | **1,417** | **111** | **1,284** | **(388)** | **2,424** |
| Other liabilities | **557** | **20,709** | **3,574** | **33,664** | **(17,494)** | **41,010** |
| Long-term debt | **4,882** | **–** | **–** | **614** | **(44)** | **5,452** |
| Liabilities for preferred shares and capital instruments | **344** | **1,008** | **–** | **4,359** | **(2,210)** | **3,501** |
| Segregated funds net liabilities | **–** | **127,717** | **7,638** | **74,701** | **(2,071)** | **207,985** |
| Shareholders' equity | **25,449** | **11,426** | **1,773** | **33,304** | **(46,503)** | **25,449** |
| Participating policyholders' equity | **–** | **–** | **–** | **146** | **–** | **146** |
| Non-controlling interest in subsidiaries | **–** | **–** | **–** | **381** | **120** | **501** |
| **Total liabilities and equity** | **$ 31,232** | **$ 269,862** | **$ 20,076** | **$ 251,530** | **$ (86,644)** | **$ 486,056** |

## Condensed Consolidating Statement of Financial Position

| As at December 31, 2011 | Manulife Financial Corporation (Guarantor) | John Hancock Life Insurance Company (U.S.A.) (Issuer) | John Hancock Life Insurance Company of New York (Issuer) | Other Subsidiaries | Consolidation Adjustments | Consolidated Manulife Financial Corporation |
|---|---|---|---|---|---|---|
| **Assets** | | | | | | |
| Invested assets | $ 58 | $ 90,391 | $ 10,240 | $ 126,327 | $ (496) | $ 226,520 |
| Investments in unconsolidated subsidiaries | 29,472 | 3,794 | 1 | 11,132 | (44,399) | – |
| Reinsurance assets | – | 22,376 | 1,156 | 3,479 | (16,283) | 10,728 |
| Other assets | 391 | 21,852 | 1,038 | 25,103 | (19,588) | 28,796 |
| Segregated funds net assets | – | 120,623 | 7,159 | 70,086 | (1,935) | 195,933 |
| **Total assets** | $ 29,921 | $ 259,036 | $ 19,594 | $ 236,127 | $ (82,701) | $ 461,977 |
| **Liabilities and equity** | | | | | | |
| Insurance contract liabilities | $ – | $ 105,815 | $ 7,135 | $ 94,199 | $ (16,783) | $ 190,366 |
| Investment contract liabilities | – | 1,442 | 83 | 1,465 | (450) | 2,540 |
| Other liabilities | 460 | 19,225 | 3,642 | 32,051 | (16,634) | 38,744 |
| Long-term debt | 4,902 | – | – | 688 | (87) | 5,503 |
| Liabilities for preferred shares and capital instruments | 344 | 1,031 | – | 5,004 | (2,367) | 4,012 |
| Segregated funds net liabilities | – | 120,623 | 7,159 | 70,086 | (1,935) | 195,933 |
| Shareholders' equity | 24,215 | 10,900 | 1,575 | 32,057 | (44,532) | 24,215 |
| Participating policyholders' equity | – | – | – | 249 | – | 249 |
| Non-controlling interest in subsidiaries | – | – | – | 328 | 87 | 415 |
| **Total liabilities and equity** | $ 29,921 | $ 259,036 | $ 19,594 | $ 236,127 | $ (82,701) | $ 461,977 |

## Condensed Consolidating Statement of Income

| For the year ended December 31, 2012 | Manulife Financial Corporation (Guarantor) | John Hancock Life Insurance Company (U.S.A.) (Issuer) | John Hancock Life Insurance Company of New York (Issuer) | Other Subsidiaries | Consolidation Adjustments | Consolidated Manulife Financial Corporation |
|---|---|---|---|---|---|---|
| **Revenue** | | | | | | |
| Net premium income | **$ –** | **$ (679)** | **$ (1,423)** | **$ 12,836** | **$ –** | **$ 10,734** |
| Net investment income (loss) | **371** | **5,286** | **674** | **6,908** | **(1,397)** | **11,842** |
| Net other revenue | **3** | **1,681** | **136** | **7,632** | **(2,096)** | **7,356** |
| **Total revenue** | **$ 374** | **$ 6,288** | **$ (613)** | **$ 27,376** | **$ (3,493)** | **$ 29,932** |
| **Contract benefits and expenses** | | | | | | |
| Net benefits and claims | **$ –** | **$ 3,219** | **$ (1,074)** | **$ 16,409** | **$ (811)** | **$ 17,743** |
| Commissions, investment and general expenses | **18** | **2,771** | **164** | **7,963** | **(1,362)** | **9,554** |
| Goodwill impairment | **–** | **–** | **–** | **200** | **–** | **200** |
| Other expenses | **303** | **169** | **12** | **2,102** | **(1,320)** | **1,266** |
| **Total contract benefits and expenses** | **$ 321** | **$ 6,159** | **$ (898)** | **$ 26,674** | **$ (3,493)** | **$ 28,763** |
| **(Loss) income before income taxes** | **$ 53** | **$ 129** | **$ 285** | **$ 702** | **$ –** | **$ 1,169** |
| Income tax (expense) recovery | **(14)** | **344** | **(79)** | **272** | **–** | **523** |
| **(Loss) income after income taxes** | **$ 39** | **$ 473** | **$ 206** | **$ 974** | **$ –** | **$ 1,692** |
| Equity in net income (loss) of unconsolidated subsidiaries | **1,697** | **189** | **–** | **662** | **(2,548)** | **–** |
| **Net income (loss)** | **$ 1,736** | **$ 662** | **$ 206** | **$ 1,636** | **$ (2,548)** | **$ 1,692** |
| Net income (loss) attributed to: | | | | | | |
| Non-controlling interest in subsidiaries | **$ –** | **$ –** | **$ –** | **$ 31** | **$ 28** | **$ 59** |
| Participating policyholders | **–** | **(47)** | **44** | **(146)** | **46** | **(103)** |
| Shareholders | **1,736** | **709** | **162** | **1,751** | **(2,622)** | **1,736** |
| | **$ 1,736** | **$ 662** | **$ 206** | **$ 1,636** | **$ (2,548)** | **$ 1,692** |

## Condensed Consolidating Statement of Income

| For the year ended December 31, 2011 | Manulife Financial Corporation (Guarantor) | John Hancock Life Insurance Company (U.S.A.) (Issuer) | John Hancock Life Insurance Company of New York (Issuer) | Other Subsidiaries | Consolidation Adjustments | Consolidated Manulife Financial Corporation |
|---|---|---|---|---|---|---|
| **Revenue** | | | | | | |
| Net premium income | $ – | $ 5,466 | $ 351 | $ 11,687 | $ – | $ 17,504 |
| Net investment income (loss) | 332 | 14,944 | 1,489 | 10,757 | (1,285) | 26,237 |
| Net other revenue | (4) | 1,883 | 129 | 11,499 | (6,265) | 7,242 |
| **Total revenue** | $ 328 | $ 22,293 | $ 1,969 | $ 33,943 | $ (7,550) | $ 50,983 |
| **Contract benefits and expenses** | | | | | | |
| Net benefits and claims | $ – | $ 19,454 | $ 1,532 | $ 23,639 | $ (4,836) | $ 39,789 |
| Commissions, investment and general expenses | 18 | 2,765 | 169 | 7,410 | (1,487) | 8,875 |
| Goodwill impairment | – | 665 | – | – | – | 665 |
| Other expenses | 320 | 404 | 16 | 1,993 | (1,227) | 1,506 |
| **Total contract benefits and expenses** | $ 338 | $ 23,288 | $ 1,717 | $ 33,042 | $ (7,550) | $ 50,835 |
| **(Loss) income before income taxes** | $ (10) | $ (995) | $ 252 | $ 901 | $ – | $ 148 |
| Income tax (expense) recovery | (2) | 256 | (86) | (71) | – | 97 |
| **(Loss) income after income taxes** | $ (12) | $ (739) | $ 166 | $ 830 | $ – | $ 245 |
| Equity in net income (loss) of unconsolidated subsidiaries | 141 | 248 | – | (491) | 102 | – |
| **Net income (loss)** | $ 129 | $ (491) | $ 166 | $ 339 | $ 102 | $ 245 |
| Net income (loss) attributed to: | | | | | | |
| Non-controlling interest in subsidiaries | $ – | $ – | $ – | $ 23 | $ 4 | $ 27 |
| Participating policyholders | – | 17 | 5 | 100 | (33) | 89 |
| Shareholders | 129 | (508) | 161 | 216 | 131 | 129 |
| | $ 129 | $ (491) | $ 166 | $ 339 | $ 102 | $ 245 |

## Consolidating Statement of Cash Flows

| For the year ended December 31, 2012 | Manulife Financial Corporation (Guarantor) | John Hancock Life Insurance Company (U.S.A.) (Issuer) | John Hancock Life Insurance Company of New York (Issuer) | Other Subsidiaries | Consolidation Adjustments | Consolidated Manulife Financial Corporation |
|---|---|---|---|---|---|---|
| **Operating activities** | | | | | | |
| Net income (loss) | $ 1,736 | $ 662 | $ 206 | $ 1,636 | $ (2,548) | $ 1,692 |
| Adjustments for non-cash items in net income (loss): | | | | | | |
| Equity in net income of unconsolidated subsidiaries | (1,697) | (189) | – | (662) | 2,548 | – |
| Increase in insurance contract liabilities | – | 6,455 | 56 | 6,931 | – | 13,442 |
| Increase in investment contract liabilities | – | 42 | 4 | 41 | – | 87 |
| (Increase) decrease in reinsurance assets, net of premiums ceded relating to FDA coinsurance (note 8) | – | (2,207) | 45 | 1,326 | – | (836) |
| Amortization of premium/discount on invested assets | – | 11 | 26 | (10) | – | 27 |
| Other amortization | (2) | 84 | 1 | 307 | – | 390 |
| Net realized and unrealized (gains) losses including impairments | (20) | (614) | (68) | (1,558) | – | (2,260) |
| Deferred income tax expense (recovery) | 14 | (886) | (34) | (598) | – | (1,504) |
| Stock option expense | – | 3 | – | 14 | – | 17 |
| Goodwill impairment | – | – | – | 200 | – | 200 |
| Net income adjusted for non-cash items | $ 31 | $ 3,361 | $ 236 | $ 7,627 | $ – | $ 11,255 |
| Dividends from unconsolidated subsidiary | 854 | – | – | – | (854) | – |
| Changes in policy related and operating receivables and payables | 11 | (1,084) | (1,910) | 2,808 | – | (175) |
| **Cash provided by (used in) operating activities** | $ 896 | $ 2,277 | $ (1,674) | $ 10,435 | $ (854) | $ 11,080 |
| **Investing activities** | | | | | | |
| Purchases and mortgage advances | $ – | $ (20,070) | $ (4,614) | $ (57,689) | $ – | $ (82,373) |
| Disposals and repayments | – | 18,803 | 6,512 | 46,235 | – | 71,550 |
| Changes in investment broker net receivables and payables | – | (32) | (4) | (135) | – | (171) |
| Investment in common shares of subsidiaries | (686) | – | – | – | 686 | – |
| Capital contribution to subsidiaries | (293) | (113) | – | – | 406 | – |
| Return of capital from unconsolidated subsidiaries | – | 39 | – | – | (39) | – |
| Notes receivables from affiliates | – | – | – | 45 | (45) | – |
| Notes receivables from parent | – | – | – | (72) | 72 | – |
| Notes receivables from subsidiaries | 24 | 7 | – | (129) | 98 | – |
| **Cash (used in) provided by investing activities** | $ (955) | $ (1,366) | $ 1,894 | $ (11,745) | $ 1,178 | $ (10,994) |
| **Financing activities** | | | | | | |
| (Decrease) increase in repurchase agreements and securities sold but not yet purchased | $ – | $ (177) | $ – | $ 191 | $ – | $ 14 |
| Issue of capital instruments, net | – | – | – | 497 | – | 497 |
| Repayment of capital instruments | – | – | – | (1,000) | – | (1,000) |
| Net (redemption) increase of investment contract liabilities | – | (36) | 25 | (143) | – | (154) |
| Funds redeemed, net | – | (2) | – | (9) | – | (11) |
| Secured borrowings from securitization transactions | – | – | – | 500 | – | 500 |
| Changes in bank deposits, net | – | – | – | 880 | – | 880 |
| Shareholder dividends paid in cash | (733) | – | – | – | – | (733) |
| (Distribution to) contribution from non-controlling interest | – | (6) | – | 35 | – | 29 |
| Common shares issued, net | – | – | – | 686 | (686) | – |
| Preferred shares issued, net | 684 | – | – | – | – | 684 |
| Dividends paid to parent | – | – | – | (854) | 854 | – |
| Capital contributions by parent | – | – | – | 406 | (406) | – |
| Return of capital to parent | – | – | – | (39) | 39 | – |
| Notes payable to affiliates | – | (45) | – | – | 45 | – |
| Notes payable to parent | – | 129 | – | (31) | (98) | – |
| Notes payable to subsidiaries | 72 | – | – | – | (72) | – |
| **Cash provided by (used in) financing activities** | $ 23 | $ (137) | $ 25 | $ 1,119 | $ (324) | $ 706 |
| **Cash and short-term securities** | | | | | | |
| Increase (decrease) during the year | $ (36) | $ 774 | $ 245 | $ (191) | $ – | $ 792 |
| Effect of foreign exchange rate changes on cash and short-term securities | – | (65) | (5) | (151) | – | (221) |
| Balance, January 1 | 58 | 3,038 | 230 | 8,954 | – | 12,280 |
| **Balance, December 31** | $ 22 | $ 3,747 | $ 470 | $ 8,612 | $ – | $ 12,851 |
| **Cash and short-term securities** | | | | | | |
| **Beginning of year** | | | | | | |
| Gross cash and short-term securities | $ 58 | $ 3,363 | $ 255 | $ 9,137 | $ – | $ 12,813 |
| Net payments in transit, included in other liabilities | – | (325) | (25) | (183) | – | (533) |
| **Net cash and short-term securities, January 1** | $ 58 | $ 3,038 | $ 230 | $ 8,954 | $ – | $ 12,280 |
| **End of year** | | | | | | |
| Gross cash and short-term securities | $ 22 | $ 4,122 | $ 492 | $ 8,848 | $ – | $ 13,484 |
| Net payments in transit, included in other liabilities | – | (375) | (22) | (236) | – | (633) |
| **Net cash and short-term securities, December 31** | $ 22 | $ 3,747 | $ 470 | $ 8,612 | $ – | $ 12,851 |
| **Supplemental disclosures on cash flow information:** | | | | | | |
| Interest paid | $ 307 | $ 172 | $ 4 | $ 1,205 | $ (628) | $ 1,060 |
| Interest received | $ – | $ 4,115 | $ 447 | $ 4,178 | $ (1) | $ 8,739 |
| Income taxes paid | $ – | $ – | $ 151 | $ 318 | $ – | $ 469 |

## Consolidating Statement of Cash Flows

| For the year ended December 31, 2011 | Manulife Financial Corporation (Guarantor) | John Hancock Life Insurance Company (U.S.A.) (Issuer) | John Hancock Life Insurance Company of New York (Issuer) | Other Subsidiaries | Consolidation Adjustments | Consolidated Manulife Financial Corporation |
|---|---|---|---|---|---|---|
| **Operating activities** | | | | | | |
| Net income (loss) | $ 129 | $ (491) | $ 166 | $ 339 | $ 102 | $ 245 |
| Adjustments for non-cash items in net income (loss): | | | | | | |
| Equity in net income of unconsolidated subsidiaries | (141) | (248) | – | 491 | (102) | – |
| Increase in insurance contract liabilities | – | 17,113 | 482 | 10,339 | – | 27,934 |
| (Decrease) increase in investment contract liabilities | – | (488) | – | 552 | – | 64 |
| (Increase) decrease in reinsurance assets | – | (6,301) | (298) | 4,747 | – | (1,852) |
| Amortization of premium/discount on invested assets | – | 30 | 52 | (57) | – | 25 |
| Other amortization | (1) | 82 | 1 | 263 | – | 345 |
| Net realized and unrealized gains including impairments | – | (10,151) | (874) | (5,734) | – | (16,759) |
| Deferred income tax expense (recovery) | – | 264 | 18 | (492) | – | (210) |
| Stock option expense | – | 6 | – | 17 | – | 23 |
| Goodwill impairment | – | 665 | – | – | – | 665 |
| Net (loss) income adjusted for non-cash items | $ (13) | $ 481 | $ (453) | $ 10,465 | $ – | $ 10,480 |
| Dividends from unconsolidated subsidiaries | 1,400 | 37 | – | – | (1,437) | – |
| Changes in policy related and operating receivables and payables | – | 3,386 | 547 | (3,545) | – | 388 |
| **Cash provided by (used in) operating activities** | $ 1,387 | $ 3,904 | $ 94 | $ 6,920 | $ (1,437) | $ 10,868 |
| **Investing activities** | | | | | | |
| Purchases and mortgage advances | $ – | $ (27,725) | $ (6,344) | $ (48,761) | $ – | $ (82,830) |
| Disposals and repayments | – | 24,651 | 6,004 | 41,196 | – | 71,851 |
| Changes in investment broker net receivables and payables | – | 28 | 3 | 191 | – | 222 |
| Notes receivables from affiliates | – | – | – | (203) | 203 | – |
| Notes receivables from parent | – | – | – | 406 | (406) | – |
| Notes receivables from subsidiaries | 28 | 10 | – | – | (38) | – |
| Capital contribution to unconsolidated subsidiary | (281) | (109) | – | – | 390 | – |
| Return of capital from unconsolidated subsidiaries | – | 133 | – | – | (133) | – |
| Investment in common shares of subsidiaries | (391) | – | – | – | 391 | – |
| **Cash (used in) provided by investing activities** | $ (644) | $ (3,012) | $ (337) | $ (7,171) | $ 407 | $ (10,757) |
| **Financing activities** | | | | | | |
| Increase (decrease) in repurchase agreements and securities sold but not yet purchased | $ – | $ 120 | $ – | $ (54) | $ – | $ 66 |
| Repayment of long-term debt | – | – | – | (396) | – | (396) |
| Issue of capital instruments, net | – | – | – | 547 | – | 547 |
| Repayment of capital instruments | – | – | – | (550) | – | (550) |
| Net increase (redemption) of investment contract liabilities | – | 83 | 43 | (694) | – | (568) |
| Funds (redeemed) borrowed, net | – | (6) | – | 50 | – | 44 |
| Secured borrowings from securitization transactions | – | – | – | 250 | – | 250 |
| Changes in bank deposits, net | – | – | – | 1,603 | – | 1,603 |
| Shareholder dividends paid in cash | (716) | – | – | (1) | – | (717) |
| Distribution to non-controlling interest | – | – | – | (17) | – | (17) |
| Common shares issued, net | 7 | – | – | 386 | (391) | 2 |
| Preferred shares issued, net | 391 | – | – | – | – | 391 |
| Dividends paid to parent | – | – | – | (1,437) | 1,437 | – |
| Return of capital to parent | – | – | – | (133) | 133 | – |
| Capital contributions by parent | – | – | – | 390 | (390) | – |
| Notes payable to affiliates | – | 203 | – | – | (203) | – |
| Notes payable to parent | – | – | – | (38) | 38 | – |
| Notes payable to subsidiaries | (406) | – | – | – | 406 | – |
| **Cash (used in) provided by financing activities** | $ (724) | $ 400 | $ 43 | $ (94) | $ 1,030 | $ 655 |
| **Cash and short-term securities** | | | | | | |
| Increase (decrease) during the year | $ 19 | $ 1,292 | $ (200) | $ (345) | $ – | $ 766 |
| Effect of foreign exchange rate changes on cash and short-term securities | – | 38 | 9 | 145 | – | 192 |
| Balance, January 1 | 39 | 1,708 | 421 | 9,154 | – | 11,322 |
| **Balance, December 31** | $ 58 | $ 3,038 | $ 230 | $ 8,954 | $ – | $ 12,280 |
| **Cash and short-term securities** | | | | | | |
| **Beginning of year** | | | | | | |
| Gross cash and short-term securities | $ 39 | $ 2,063 | $ 443 | $ 9,304 | $ – | $ 11,849 |
| Net payments in transit, included in other liabilities | – | (355) | (22) | (150) | – | (527) |
| **Net cash and short-term securities, January 1** | $ 39 | $ 1,708 | $ 421 | $ 9,154 | $ – | $ 11,322 |
| **End of year** | | | | | | |
| Gross cash and short-term securities | $ 58 | $ 3,363 | $ 255 | $ 9,137 | $ – | $ 12,813 |
| Net payments in transit, included in other liabilities | – | (325) | (25) | (183) | – | (533) |
| **Net cash and short-term securities, December 31** | $ 58 | $ 3,038 | $ 230 | $ 8,954 | $ – | $ 12,280 |
| **Supplemental disclosures on cash flow information:** | | | | | | |
| Interest paid | $ 321 | $ 92 | $ 3 | $ 1,286 | $ (649) | $ 1,053 |
| Interest received | $ – | $ 3,999 | $ 446 | $ 3,989 | $ (39) | $ 8,395 |
| (Tax refunds received) income taxes paid | $ (10) | $ (313) | $ 71 | $ 507 | $ – | $ 255 |

## Note 25 Comparatives

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

Exhibit 99.2

Manulife Financial
For your future™

# Manulife Financial Corporation

## *Management's Discussion and Analysis*

### For the year ended December 31, 2012



# 2012 Manulife Financial Corporation Management's Discussion And Analysis

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### Caution regarding forward-looking statements

This document contains forward-looking statements within the meaning of 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 our 2016 management objectives for core earnings and core ROE, potential future charges related to URR assumptions if current low interest rates persist, changes in MLI's MCCSR ratio and additional risks regarding entities within the MFC group that are interconnected which may make separation difficult. The forward-looking statements in this document 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, including in the case of our 2016 management objectives for core earnings and core ROE, the assumptions described under "Key Planning Assumptions and Uncertainties" in this document 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 in "Key Planning Assumptions and Uncertainties" in this document; 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; 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 and actuarial 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; unforeseen liabilities or asset impairments arising from acquisitions and dispositions of 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 disruption of or changes to key elements of the Company's or public infrastructure systems; environmental concerns; and our ability to protect our intellectual property and exposure to claims of infringement. Additional information about material 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 the body of this document under "Risk Management and Risk Factors" and "Critical Accounting and Actuarial Policies" in the Management's Discussion and Analysis and in the "Risk Management" note to the consolidated financial statements as well as under "Risk Factors" in our most recent Annual Information Form and elsewhere in our filings with Canadian and U.S. securities regulators. We do not undertake to update any forward-looking statements, except as required by law.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

This Management's Discussion and Analysis ("MD&A") is current as of March 15, 2013.

## Overview

***Manulife Financial is a leading Canada-based financial services group with principal operations in Asia, Canada and the United States. Manulife Financial's vision is to provide its clients with strong, reliable, trustworthy and forward-thinking solutions for their most significant financial decisions. Our international network of employees, agents and distribution partners offers financial protection and wealth management products and services to millions of customers. These products and services include individual life insurance, group life and health insurance, long-term care services, pension products, annuities, mutual funds and banking products. We provide asset management services to institutional customers worldwide and offer reinsurance solutions, specializing in property and casualty retrocession. Funds under management[1] by Manulife Financial and its subsidiaries were $532 billion as at December 31, 2012. The Company operates as Manulife Financial in Canada and Asia and primarily as John Hancock in the United States.***

***Manulife Financial Corporation trades as 'MFC' on the TSX, NYSE and PSE, and under '945' on the SEHK. Manulife Financial can be found on the internet at manulife.com.***

In this document, the terms "Company", "Manulife Financial" and "we" mean Manulife Financial Corporation ("MFC") and its subsidiaries.

In 2012 we made significant progress towards our strategic priorities:

- Developing our Asian opportunity to the fullest,
- Growing our wealth and asset management businesses in Asia, Canada, and the U.S.,
- Continuing to build our balanced Canadian franchise, and
- Continuing to grow higher return on equity ("ROE"), lower risk U.S. businesses.

We ended 2012 with record annual sales[1] in both our Insurance and Wealth businesses excluding variable annuities. Our Asian operations delivered strong growth by expanding our distribution networks, including growing our bancassurance partnerships. We generated another all-time record for funds under management as a result of record sales in our mutual fund and asset management businesses.

Since 2010, we have enjoyed a positive progression in earnings and in 2012 improved our annual net income attributed to shareholders by $1.6 billion over 2011. We reported net income attributed to shareholders for 2012 of $1,736 million compared with $129 million in 2011. While 2012 earnings included strong investment related gains of $1,137 million, they also included a $1,081 million charge for changes in actuarial methods and assumptions and a $758 million charge for the direct impact of equity markets and interest rates.

In 2012 we introduced "core earnings"[1] – a non-GAAP measure which management believes better reflects our underlying earnings capacity. Core earnings excludes investment related gains in excess of $200 million per annum (the $200 million per annum to be reported in core earnings compares with an average of over $320 million per annum reported from 2007 to 2011). It also excludes the mark-to-market accounting impact of equity markets and interest rates as well as a number of other items, outlined in the Financial Performance section below.

Core earnings in 2012 were $2,187 million compared with $2,169 million in 2011. The $18 million increase included a number of offsetting items. Improved new business margins, increased fee income driven by higher funds under management, a higher scheduled release of provisions for adverse deviation for variable annuity guarantees driven by higher equity markets, and the non-recurrence of material Property and Casualty Reinsurance claims were mostly offset by additional macro equity hedging costs, higher pension costs related to amortization of prior years' unrealized investment losses on the Company's own pension plans, and higher business development and project related expenses.

Asia Division continues to build a pan-Asian life insurance franchise that is well positioned to satisfy the protection and retirement needs of the fast growing customer base in the region. Our core strategy focuses on expanding our professional agency force and alternative channel distribution, growing our wealth and asset management businesses and investing in our brand across Asia. In 2012, we achieved record sales for both insurance and wealth (excluding variable annuities) products, secured and deepened strategically important distribution agreements with key bank partners in Japan and Indonesia, achieved strong growth in our professional agency force in several key markets, and successfully expanded our presence in the Managing General Agent channel into the retail market in Japan. We launched innovative brand building campaigns to enhance our strong global brand, became the first foreign owned life insurer to commence operations in Cambodia, and we expanded our broad geographic footprint in China with our 50th city license.

The Canadian Division continued to build our diversified Canadian franchise. We achieved record full year sales in several business lines, namely: Group Benefits, Manulife Mutual Funds and Affinity Markets, and Group Retirement Solutions once again led the defined contribution market in sales[2]. We continued to drive our desired shift in product mix, reducing the proportion of insurance

[1] This item is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
[2] Based on quarterly sales survey by LIMRA, an insurance industry organization, for the year ended December 31, 2012.

and variable annuity sales with guarantee features. We expanded our distribution reach by welcoming new advisors, extending existing relationships and enhancing support to our distribution partners. On January 4th, 2013 we completed our acquisition of Benesure Canada Inc., strategically positioning us as the leading provider of mortgage creditor insurance through mortgage brokers in Canada.

The U.S. Division continues to make substantive progress towards our strategic priority of growing higher ROE and lower risk businesses. Our focus is on building a leading company in the U.S. that helps Americans with their retirement, long-term care and estate planning needs. We are leveraging our trusted brand, diverse and broad distribution, and core business strength of product innovation to profitably grow our de-risked insurance and wealth management franchises. In 2012 we achieved record sales in our mutual fund and 401(k) businesses and continued to achieve success in our product repositioning strategy in a low interest rate environment. Through product re-design, re-pricing and business re-positioning, we have reduced the equity and interest rate risk and earnings sensitivity of our product portfolio, while we continue to invest in the growth of fee-based products with lower capital requirements and higher return potential, including our 401(k), mutual fund and lower risk insurance products. We are seeing the desired impact of these actions on our product sales mix with a continued shift away from guaranteed, long-duration products in 2012.

The Investment Division continued to deliver strong investment gains with fixed income and alternative long-duration asset investing along with excellent credit experience accounting for the vast majority of our investment gains. The favourable credit experience reflects the strength of our underwriting and the alternative long-duration assets originated during 2012 further diversified our portfolio and continue to enhance our risk-adjusted returns. The acquisitions were across various asset classes including real estate, timberland, private equities, and infrastructure. We continue to focus our acquisitions on high quality, good relative value assets.

Manulife Asset Management experienced significant growth in 2012 across its global franchise, with assets under management increasing by 12 per cent to $238 billion. Our strong investment performance is yielding tangible results across many asset classes. We successfully launched several new products which have enabled us to meet our retail clients' needs, and we have been awarded new institutional mandates in North America and Asia which have contributed to significant growth in institutional assets under management.

We also achieved our 2014 equity and interest rate hedging goals two years ahead of schedule and closed 2012 with a strong Minimum Continuing Capital and Surplus Requirements ("MCCSR") capital ratio for The Manufacturers Life Insurance Company ("MLI") of 211 per cent.

# Financial Performance

In 2012 the Company introduced “core earnings” – a non-GAAP measure, which management believes better reflects our underlying earnings capacity. Core earnings excludes the direct impact of equity markets and interest rates as well as a number of other items, outlined below, that are considered material and exceptional in nature. This metric is not insulated from macro-economic factors which can have a significant impact. Any future changes to the core earnings definition referred to below will be disclosed.

**Items that are included in core earnings are:**

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 to expense assumptions used in the measurement of policy liabilities.
6. Up to $200 million of investment gains reported in a single year, which are referred to as “core” investment gains.
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 are:**

1. The direct impact of equity markets and interest rates, consisting of:
   - Income (loss) on variable annuity guarantee liabilities not dynamically hedged.
   - Gains (charges) on general fund equity investments supporting policy liabilities and on fee income.
   - Gains (losses) 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 policy liabilities.
   - Gains (charges) on higher (lower) fixed income reinvestment rates assumed in the valuation of policy liabilities, including the impact on the fixed income ultimate reinvestment rate (“URR”).
   - Gains (charges) on sale of AFS bonds and open derivatives not in hedging relationships in the Corporate and Other segment.
2. 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 policy 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.
3. Net investment related gains in excess of $200 million per annum or net losses on a year-to-date basis. Investment gains (losses) relate to fixed income trading, non-fixed income returns, credit experience and asset mix changes. These gain and losses are a combination of reported investment experience as well as the impact of investing activities on the measurement of our policy liabilities. The maximum of $200 million per annum to be reported in core earnings compares with an average of over $80 million per quarter of investment gains reported from 2007 to 2011.
4. 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.
5. Changes in actuarial methods and assumptions, excluding URR.
6. The impact on the measurement of policy liabilities of changes in product features or new reinsurance transactions, if material.
7. Goodwill impairment charges.
8. Gains or losses on disposition of a business.
9. Material one-time only adjustments, including highly unusual/extraordinary and material legal settlements or other items that are material and exceptional in nature.
10. Tax on the above items.
11. Impact of enacted or substantially enacted income tax rate changes.

# Financial Highlights

| As at and for the years ended December 31, (C$ millions, unless otherwise stated) | 2012 | 2011 | 2010 |
|---|---|---|---|
| **Net income (loss) attributed to shareholders** | **$ 1,736** | $ 129 | $ (1,663) |
| Preferred share dividends | **(112)** | (85) | (79) |
| **Common shareholders' net income (loss)** | **$ 1,624** | $ 44 | $ (1,742) |
| Reconciliation of core earnings to net income (loss) attributed to shareholders: | | | |
| **Core earnings**[1] | **$ 2,187** | $ 2,169 | $ 3,132 |
| Investment related gains in excess of core investment gains | **937** | 1,290 | 484 |
| **Core earnings plus investment related gains in excess of core investment gains** | **$ 3,124** | $ 3,459 | $ 3,616 |
| Other items to reconcile core earnings to net income (loss) attributed to shareholders: | | | |
| Direct impact of equity markets and interest rates | **(758)** | (1,064) | (1,003) |
| Changes in actuarial methods and assumptions (other than URR) and goodwill impairment | **(1,281)** | (1,416) | (4,096) |
| Other items | **651** | (850) | (180) |
| **Net income (loss) attributed to shareholders** | **$ 1,736** | $ 129 | $ (1,663) |
| Basic earnings (loss) per common share (C$) | **$ 0.90** | $ 0.02 | $ (0.99) |
| Diluted earnings (loss) per common share (C$) | **$ 0.88** | $ 0.02 | $ (0.99) |
| Diluted core earnings per common share (C$)[1] | **$ 1.12** | $ 1.14 | $ 1.68 |
| Return on common shareholders' equity | **7.1%** | 0.2% | (7.2)% |
| U.S. GAAP net income attributed to shareholders[1] | **$ 2,557** | $ 3,674 | $ 1,652 |
| Sales[1] | | | |
| Insurance products | **$ 3,349** | $ 2,507 | $ 2,530 |
| Wealth products | **$ 35,940** | $ 34,299 | $ 33,904 |
| Premiums and deposits[1] | | | |
| Insurance products | **$ 24,221** | $ 22,278 | $ 21,736 |
| Wealth products | **$ 51,280** | $ 43,783 | $ 43,370 |
| Funds under management (C$ billions)[1] | **$ 532** | $ 500 | $ 477 |
| Capital (C$ billions)[1] | **$ 29.6** | $ 29.0 | $ 28.7 |
| MLI's MCCSR ratio[2] | **211%** | 216% | 249% |
| Sensitivities to equity markets and interest rates: | | | |
| % of underlying earnings sensitivity to equity market movements offset by hedges[3] | **72 to 83%** | 59 to 70% | 50 to 55% |
| Earnings impact of a 1% parallel decline in interest rates[4] | **$ (400)** | $ (1,000) | $ (1,800) |

(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.

(2) The ratio for 2010 has been calculated in accordance with Canadian generally accepted accounting principles prior to the adoption of International Financial Reporting Standards ("IFRS").

(3) The lower end of the range represents the impact of re-balancing equity hedges for dynamically hedged variable annuity guarantee liabilities at 5% market decline intervals. Includes the hedge ineffectiveness impact associated with the unhedged provisions for adverse deviation, but does not include any impact in respect of other sources of hedge ineffectiveness, e.g. basis risk, realized volatility and equity, interest rate correlations different from expected among other factors. For presentation purposes, numbers are rounded. See "Risk Management and Risk Factors" section.

(4) The impact above excludes the impact of market value changes in available-for-sale ("AFS") bonds. The AFS bonds provide a natural economic offset to the interest rate risk arising from our product liabilities, and if included would have reduced the impact by $(800), $(800) and $(1,200) for the years ended December 31, 2012, 2011 and 2010.

### Analysis of Net Income (Loss)

We reported net income attributed to shareholders for the full year 2012 of $1,736 million compared with $129 million in 2011. Core earnings in 2012 were $2,187 million compared with $2,169 million in 2011.

The $18 million increase in core earnings compared with full year 2011 included a number of offsetting items. Improved new business margins, increased fee income driven by higher funds under management, a higher scheduled release of variable annuity guarantee margins driven by higher equity markets, and the non-recurrence of material Property and Casualty Reinsurance claim provisions were mostly offset by $81 million of costs associated with additional equity futures in our macro equity hedging program and higher pension costs related to amortization of prior years' unrealized investment losses on the Company's own pension plans, and higher business development and project related expenses.

The difference between full year 2012 core earnings and full year net income attributed to shareholders was a $451 million net charge. Charges included $1,081 million for changes in actuarial methods and assumptions, $758 million for the direct impact of equity markets and interest rates, $200 million for the impairment of goodwill and $57 million related to restructuring. These charges were partially offset by $937 million of investment related gains in excess of the $200 million reported in core earnings and $708 million for the tax items, major reinsurance and in-force product activities, as well as income on variable annuity guarantee liabilities that are dynamically hedged. These items are further outlined in the table below.

The $937 million of investment related gains in excess of the $200 million reported in core earnings was primarily a result of fixed income and alternative long-duration asset investing along with excellent credit experience.

The net $1,081 million charge related to the update to the actuarial methods and assumptions excluding the fixed income ultimate reinvestment rate are broadly grouped into three categories: (i) updates to actuarial standards of practice, (ii) updates largely related to the current macro-economic climate, and (iii) all other results of the annual review of assumptions.

- A charge of $244 million related to updates to Actuarial Standards of Practice for the calibration of equity returns used in stochastic models to value segregated fund guarantee liabilities.
- Charges related largely to the impact of the current macro-economic climate were $1,120 million. The current macro-economic climate, including current low interest rates and the current level of equity markets, has made minimum interest rate guarantees and equity fund performance guarantees more valuable and has therefore increased the propensity of policyholders to retain their policies and alter guaranteed withdrawal benefits utilization. Charges resulted from strengthening withdrawal and lapse assumptions for U.S. Variable Annuity Guaranteed Minimum Withdrawal Benefit policies, and updates to lapse assumptions for certain life insurance products in the U.S. Charges also resulted from updates to bond parameters for segregated fund guarantees and from updates to interest rates for certain participating insurance businesses.
- Other changes to actuarial methods and assumptions netted to a gain of $283 million. Favourable impacts to earnings resulted from updates to mortality and morbidity assumptions, net updates to expense assumptions, refinements to modeling of corporate spreads, refinements to the margins on our dynamically hedged variable annuity business and from a number of refinements in the modeling of policy cash flows. Partially offsetting these favourable impacts were updates to the modeling of liability cash flows, including the estimated impact of systems conversion in U.S. Life, updated lapse assumptions in Japan and Canada, and the net impact of refinements to the modeling of cash flows and updated assumed return assumptions for alternative long-duration assets.

The $200 million charge related to goodwill was associated with the Individual Insurance business in Canada and was driven by the low interest rate environment.

The $758 million charge for the direct impact of equity markets and interest rates included a $677 million charge as a result of lower fixed income ultimate reinvestment rates assumed in the valuation of our policy liabilities. We reported a net gain of $675 million related to the combined impact of markets on variable annuity guaranteed liabilities that are not hedged, the impact of equity markets on general fund liabilities and macro equity hedges. As a result of the decline in interest rates during 2012 we reported a loss of $756 million related to fixed income reinvestment rates assumed in the valuation of policy liabilities and realized losses on AFS bonds and derivative positions.

The combination of our macro public equity and dynamic hedging programs substantially reduces our sensitivities to our variable annuity and other public market equity declines, and mitigates against significant market moves. Gross equity exposure produced gains of $2,025 million in 2012, 58 per cent of which were offset by the macro hedge experience and the dynamic hedges.

The $57 million ($78 million pre-tax) restructuring charge for severance related to the Company's Organizational Design initiative. The initiative, started in 2012 and expected to be completed in 2013, is designed to broaden the spans of control and reduce the number of management layers in the organization.

The gain of $708 million included a $176 million gain on variable annuity guarantee liabilities that are dynamically hedged, a net gain of $210 million related to major reinsurance transactions, in-force product changes and dispositions and a gain of $322 million for material and exceptional tax items. With respect to the tax items, we released $182 million of provisions related to prior years' uncertain tax positions on one item, we reported a net gain of $82 million related to interest on our tax contingency for leasing transactions and a $58 million gain related to the enactment of new tax rates in Japan.

The table below reconciles 2012 core earnings of $2,187 million to the reported net income attributed to shareholders of $1,736 million.

**For the years ended December 31,**

| (C$ millions, unaudited) | **2012** | 2011 | 2010 |
|---|---|---|---|
| **Core earnings (losses)** [1] | | | |
| Asia Division | **$ 963** | $ 938 | $ 915 |
| Canadian Division | **835** | 849 | 1,059 |
| U.S. Division | **1,085** | 1,005 | 1,051 |
| Corporate & Other (excluding expected cost of macro hedges) | **(407)** | (415) | (59) |
| Expected cost of macro hedges [2] | **(489)** | (408) | (34) |
| Core investment related gains | **200** | 200 | 200 |
| **Total core earnings** | **$ 2,187** | $ 2,169 | $ 3,132 |
| Investment related gains in excess of core investment gains | **937** | 1,290 | 484 |
| **Core earnings plus investment related gains above** | **$ 3,124** | $ 3,459 | $ 3,616 |
| Change in actuarial methods and assumptions, excluding URR [3] | **(1,081)** | (751) | (1,766) |
| Direct impact of equity markets and interest rates (see table below) [4] | **(758)** | (1,064) | (1,003) |
| Goodwill impairment charge | **(200)** | (665) | (2,330) |
| Income (charges) on variable annuity guarantee liabilities that are dynamically hedged [5] | **176** | (1,153) | (180) |
| Impact of major reinsurance transactions, in-force product changes and dispositions | **210** | 303 | – |
| Material and exceptional tax related items [6] | **322** | – | – |
| Restructuring charge related to organizational design [7] | **(57)** | – | – |
| **Net income (loss) attributed to shareholders** | **$ 1,736** | $ 129 | $ (1,663) |

(1) This is a non-GAAP measure. See “Performance and Non-GAAP Measures” below.
(2) The 2012 net loss from macro equity hedges was $1,000 million and consisted of a $489 million charge related to the estimated expected cost of the macro equity hedges relative to our long-term valuation assumptions and a charge of $511 million because actual markets outperformed our valuation assumptions. The latter amount is included in the direct impact of equity markets and interest rates (see table below).
(3) Of the full year 2012 $1,081 million charge for change in actuarial methods and assumptions, $1,006 million was reported in the third quarter as part of the comprehensive annual review of valuation assumptions. The full year charges were broadly grouped into three categories: (i) a charge of $244 million related to updates to actuarial standards of practice, (ii) a charge of $1,120 million for updates largely related to the current macro-economic climate, and (iii) all other results of the annual review of assumptions netted to a gain of $283 million. See section “Review of Actuarial Methods and Assumptions”.
(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 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 AFS bonds as management may have the ability to partially offset the direct impacts of changes in interest rates reported in the liability segments.
(5) 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. See the “Risk Management” section.
(6) Included in the tax items are $264 million of material and exceptional U.S. tax items and $58 million for changes to tax rates in Japan.
(7) The restructuring charge relates to severance under the Company’s Organizational Design Project. The project is designed to broaden the spans of control and reduce the number of layers in the organization.

The loss related to the direct impact of equity markets and interest rates in the table above is attributable to:

**For the years ended December 31,**

| (C$ millions, unaudited) | **2012** | 2011 | 2010 |
|---|---|---|---|
| Variable annuity liabilities that are not dynamically hedged | **$ 1,078** | $ (1,092) | $ (30) |
| General fund equity investments supporting policy liabilities [1] | **108** | (214) | 133 |
| Macro equity hedges relative to expected costs [2] | **(511)** | 636 | (48) |
| Lower fixed income reinvestment rates assumed in the valuation of policy liabilities [3] | **(740)** | (281) | (1,293) |
| Sale of AFS bonds and derivative positions in the Corporate & Other segment | **(16)** | 324 | 544 |
| Charges due to lower fixed income URR assumptions used in the valuation of policy liabilities | **(677)** | (437) | (309) |
| **Direct impact of equity markets and interest rates** | **$ (758)** | $ (1,064) | $ (1,003) |

(1) The impact on general fund equity investment supporting policy liabilities includes the capitalized impact on fees for variable universal life policies.
(2) Gross equity exposure produced gains of $2,026 million in 2012, which were partially offset by charges from macro hedge experience and dynamic hedges of $1,174 million.
(3) The $740 million charge in 2012 for lower assumed fixed income returns was driven mainly by lower corporate spreads and increases in swap spreads.

**Earnings per Common Share and Return on Common Shareholders' Equity**
Net income per common share for 2012 was $0.90, compared to $0.02 in 2011. Return on common shareholders' equity for 2012 was 7.1 per cent, compared to 0.2 per cent for 2011.

**Sales**
We reported record annual sales[3] in both our Insurance and Wealth businesses excluding variable annuities.

**Insurance sales** exceeded $3.3 billion for the full year 2012, an increase[4] of 33 per cent compared with 2011. Full year insurance sales in Asia increased 16 per cent versus 2011 with record sales levels achieved in eight territories. Insurance sales in Canada almost doubled year over year driven by record Group Benefits sales. Canadian recurring premium insurance sales were eight per cent lower than the prior year due to the implementation of de-risking strategies. In the U.S., JH Life 2012 full year sales increased 12 per cent versus full year 2011 although overall U.S. insurance sales were four per cent lower as a result of the Company's decision to raise prices and focus on new products with favourable risk characteristics.

**Wealth sales** were almost $36 billion for full year 2012 and increased four per cent compared with full year 2011 despite restrictions placed on annuity sales by the Company. Asia reported strong growth throughout most of the region with total wealth sales increasing 36 per cent over 2011. Wealth sales in Japan more than doubled in 2012 while Indonesia exceeded the US$1 billion mark in total wealth sales. In Canada, mutual fund sales achieved record levels, while Group Retirement Solutions sales increased 17 per cent compared with 2011. These increases in Canada were partially offset by the anticipated reduction in annuity sales and lower new loan volumes. As a result, overall Canadian wealth sales in 2012 were seven per cent lower than in full year 2011. U.S. wealth sales increased three per cent for the full year compared to 2011. JH Funds and JH RPS reported record full year sales with year over year increases of eight per cent and 28 per cent, respectively.

**Premiums and Deposits**
Total Company premiums and deposits[5] for insurance products increased to $24.2 billion in 2012, an increase[6] of eight per cent over 2011. The increase was 24 per cent in Asia, seven per cent in Canada and one per cent in the U.S.

Total Company premiums and deposits for wealth products increased to $51.3 billion in 2012, an increase of 16 per cent over 2011. The increase was 35 per cent in Asia and four per cent in the U.S. In Canada, premiums and deposits were in line with 2011 due to the decline in sales of variable annuity and fixed wealth products. The strong total Company result also included $7.9 billion of Manulife Asset Management institutional deposits, one and half times more than in 2011.

**Funds under Management**
Funds under management as at December 31, 2012 were a record $532 billion, an increase of $32 billion, or nine per cent on a constant currency basis, over December 31, 2011. The increase was attributed to $44 billion of favourable investment returns and $14 billion of net positive policyholder cash flows, partially offset by the transfer of $7 billion of assets related to the reinsurance of our U.S. fixed deferred annuity business, $11 billion due to currency movements and $8 billion of non-policyholder cash outflows (expenses, commissions, taxes and other items).

**Funds under management**

| **As at December 31,** (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| General fund | **$ 229,928** | $ 226,520 | $ 201,222 |
| Segregated funds net assets[(1)] | **207,985** | 195,933 | 198,972 |
| Mutual funds, institutional advisory accounts and other[(1),(2)] | **94,029** | 77,199 | 76,763 |
| **Total funds under management** | **$ 531,942** | $ 499,652 | $ 476,957 |

(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[7] was $29.6 billion as at December 31, 2012 compared to $29.0 billion as at December 31, 2011, an increase of $0.6 billion. The increase included net earnings of $1.7 billion and net capital raised of $0.2 billion, partially offset by the $0.8 billion impact of the stronger Canadian dollar and cash dividends of $0.7 billion over the period.

3 This is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
4 Growth in sales is stated on a constant currency basis. Constant currency basis is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
5 This is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
6 Growth in premiums and deposits is stated on a constant currency basis. Constant currency basis is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
7 This is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

### Public Equity Risk and Interest Rate Risk Reduction Plans

We achieved both our equity and interest rate hedging targets two years ahead of our 2014 goals thereby further reducing volatility of earnings.

Our established risk reduction plans were designed to reduce our exposure to public equity risk and interest rate risk through a combination of time-scheduled and market-trigger based actions. Our goal was to have approximately 75 per cent of our underlying earnings sensitivity to public equity market movements offset by hedges by the end of 2014 and to reduce our interest rate exposures, as measured by the sensitivity of shareholders' net income to a 100 basis point decline in interest rates, to $1.1 billion as at year end 2014. At December 31, 2012 between 72 and 83 per cent of our underlying earnings sensitivity to a ten per cent decline in equity markets was offset by hedges and the impact of a 100 basis point decline in interest rates on our earnings was $400 million.

### Fourth Quarter Financial Highlights

**For the quarters ended December 31,**

| (C$ millions, except per share amounts) | **2012** | 2011 | 2010 |
|---|---|---|---|
| Net income (loss) attributed to shareholders | **$ 1,057** | $ (69) | $ 1,796 |
| Core earnings[1] (see next page for reconciliation) | **$ 537** | $ 373 | $ 862 |
| Diluted earnings (loss) per common share (C$) | **$ 0.56** | $ (0.05) | $ 0.96 |
| Diluted core earnings per common share (C$)[1] | **$ 0.28** | $ 0.19 | $ 0.46 |
| Return on common shareholders' equity (annualized) | **18.2%** | (1.6)% | 31.6% |
| Sales[1] | | | |
| Insurance products | **$ 929** | $ 640 | $ 702 |
| Wealth products | **$ 10,439** | $ 8,141 | $ 9,166 |
| Premiums and deposits[1] | | | |
| Insurance products | **$ 6,629** | $ 5,749 | $ 5,729 |
| Wealth products | **$ 17,499** | $ 10,168 | $ 10,990 |

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

### Net Income (Loss) Attributed to Shareholders

In the fourth quarter of 2012, we reported net income attributed to shareholders of $1,057 million and core earnings of $537 million.

Core earnings increased $164 million compared with the fourth quarter of 2011. The increase was driven by a combination of increased fee income on funds under management and the significant improvement in new business margins as a result of pricing actions and improvement in business mix. In addition there were a number of offsetting items in the fourth quarter 2012. The favourable impact of the net release of excess Property and Casualty Reinsurance provisions ($38 million) and certain tax items ($48 million) was offset by sales and other incentive expenses ($32 million), systems and legal fees ($18 million) and higher macro hedge costs ($43 million).

The difference between fourth quarter 2012 core earnings and net income attributed to shareholders was a $520 million net gain, and consisted of:

- $318 million of investment related gains in excess of the $50 million included in core earnings;
- $264 million of favourable tax related changes that were considered material and exceptional in nature; and
- $100 million gain related to our hedged variable annuity guarantees;

partially offset by charges of:

- $87 million primarily attributed to the estimated impact of modeling refinements relating to a valuation systems conversion;
- $57 million ($78 million pre-tax) restructuring charge for severance related to the Company's Organizational Design Project; and
- $18 million for the direct impact of equity markets and interest rates.

### Analysis of Net Income (Loss)

The table below reconciles the fourth quarter 2012 core earnings of $537 million to the reported net income attributed to shareholders of $1,057 million.

| (C$ millions, unaudited) | 4Q 2012 | 4Q 2011 |
|---|---|---|
| **Core earnings (loss)** [1] | | |
| Asia Division | **$ 180** | $ 213 |
| Canadian Division | **233** | 142 |
| U.S. Division | **293** | 189 |
| Corporate & Other (excluding expected cost of macro hedges) | **(79)** | (124) |
| Expected cost of macro hedges [2] | **(140)** | (97) |
| Core investment related gains | **50** | 50 |
| **Core earnings** | **$ 537** | $ 373 |
| Investment related gains in excess of core investment gains | **318** | 261 |
| **Core earnings plus investment related gains in excess of core investment gains** | **$ 855** | $ 634 |
| Other items to reconcile core earnings to net income (loss) attributed to shareholders: | | |
| Material and exceptional tax related items [3] | **264** | – |
| Income (charges) on variable annuity guarantee liabilities that are dynamically hedged [4] | **100** | (193) |
| Change in actuarial methods and assumptions excluding URR [5] | **(87)** | 2 |
| Restructuring charge related to organizational design [6] | **(57)** | – |
| Direct impact of equity markets and interest rates [7] | **(18)** | 153 |
| Goodwill impairment charge [8] | **–** | (665) |
| **Net income (loss) attributed to shareholders** | **$ 1,057** | $ (69) |

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

[2] The fourth quarter 2012 net loss from macro equity hedges was $432 million and consisted of a $140 million charge related to the estimated expected cost of the macro equity hedges relative to our long-term valuation assumptions and a charge of $292 million because actual markets outperformed our valuation assumptions. This latter amount is included in the direct impact of equity markets and interest rates.

[3] In accordance with our definition of core earnings above, certain fourth quarter tax related items were considered material and exceptional in nature and therefore not included in core earnings. Please note that core earnings does include routine type tax transactions and provisions.

[4] 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 gain in the fourth quarter 2012 was mostly because our equity fund results outperformed indices and the tightening of corporate spreads had a favourable impact on our bond funds. See the Risk Management section.

[5] The charge for the fourth quarter of 2012 is primarily related to the estimated impact of modeling refinements relating to a valuation system conversion in the U.S.

[6] The restructuring charge relates to severance under the Company’s Organizational Design Project. The project is designed to broaden the spans of control and reduce the number of layers in the organization.

[7] 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 gains and losses on derivatives associated with our macro equity hedges. We also include gains and losses on the sale of AFS bonds as management may have the ability to partially offset the direct impacts of changes in interest rates reported in the liability segments.

[8] The goodwill impairment charge in 2011 related to the JH Life cash generating unit.

### Sales[8]

**Insurance sales** were $929 million in the fourth quarter of 2012, an increase of 49 per cent compared with fourth quarter of 2011 and included a large Group Benefits sale. In Asia, fourth quarter insurance sales of US$362 million were up 20 per cent from the same quarter of 2011. In Canada, Group Benefits’ sales for the quarter were three and a half times the same quarter of the prior year and we reported lower but more profitable sales in Individual Insurance. In the U.S., insurance sales increased 13 per cent, mainly driven by successful new product offerings with favourable risk characteristics.

**Wealth sales** of $10.4 billion in the fourth quarter 2012 increased 31 per cent compared with the fourth quarter of 2011. Wealth sales in Asia were more than double those in the fourth quarter 2011 with all countries and territories contributing to the increase. Growth in Japan was fueled by the successful launch of the Strategic Income Fund and continued strong sales of the Australian dollar denominated fixed annuity product. In Canada, record mutual fund sales and a 45 per cent increase in sales in Group Retirement Solutions were more than offset by the decline in annuity sales and lower new loan volumes, resulting in an overall reduction of four per cent compared with the fourth quarter 2011. In the U.S., wealth sales increased 31 per cent over fourth quarter 2011. Both JH Funds and JH RPS reported record quarterly sales, with JH RPS capitalizing on the high turnover in the market including the exit of a key competitor.

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

# Performance by Division

## Asia Division

***Manulife Financial has operated in Asia since 1897, beginning in Hong Kong. Today, as a pan-Asian insurer, we have insurance and asset management operations in 12 markets. In addition to Hong Kong we operate in the Philippines, Singapore, Indonesia, Macau, Taiwan, China, Japan, Vietnam, Malaysia, Thailand and Cambodia.***

***We offer a diverse portfolio of protection, savings and wealth management products and services to meet the needs of individuals and corporate customers. To reach our customers we distribute our products through a multi-channel network, including more than fifty thousand tied agents, bank partners, independent agents, and financial advisors.***

In 2012, Asia Division contributed 18 per cent of total premiums and deposits and, as at December 31, 2012, accounted for 15 per cent of the Company's funds under management.

### Financial Performance

Asia Division's net income attributed to shareholders for 2012 was US$1,979 million in 2012 compared with a net loss of US$62 million for 2011. The significant increase was primarily related to the change in direct impact of equity markets and interest rates on variable annuity guarantee liabilities that are not dynamically hedged.

Core earnings of US$963 million increased by US$13 million. The increase was attributable to growth in in-force business across the region partially offset by an increase in expenses related to expansion activities and the non-recurrence of policyholder experience gains reported in 2011.

On a Canadian dollar basis, the net income attributed to shareholders for 2012 was $1,969 million compared to a net loss of $48 million reported a year earlier.

The table below reconciles core earnings to net income (loss) attributed to shareholders for Asia Division for 2012, 2011 and 2010.

| **For the years ended December 31,** | **Canadian $** | | | **US $** | | |
|---|---|---|---|---|---|---|
| ($ millions) | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| **Core earnings**[1] | **$ 963** | $ 938 | $ 915 | **$ 963** | $ 950 | $ 893 |
| Items to reconcile core earnings to net income attributed to shareholders: | | | | | | |
| Direct impact of equity markets and interest rates[2] | **906** | (1,159) | (242) | **915** | (1,186) | (242) |
| Investment gains related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes and credit experience | **55** | 204 | 57 | **56** | 205 | 56 |
| Unrealized gain (loss) on variable annuity guarantee liabilities that are dynamically hedged[3] | **5** | (31) | (18) | **5** | (31) | (18) |
| Favourable impact of enacted tax rate changes | **40** | – | – | **40** | – | – |
| **Net income (loss) attributed to shareholders** | **$ 1,969** | $ (48) | $ 712 | **$ 1,979** | $ (62) | $ 689 |

(1) Core earnings is a non-GAAP measure. See "Performance and Non-GAAP Measure" 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. The gains of C$906 million in 2012 (2011 – loss of C$1,159 million) consisted of a C$946 million gain (2011 – loss of C$877 million) related to variable annuities that are not dynamically hedged, C$70 million gain (2011 – loss of C$120 million) on general fund equity investments supporting policy liabilities and on fee income and C$110 million loss (2011 – loss of C$162 million) related to fixed income reinvestment rates assumed in the valuation of policy liabilities.

(3) 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 amount of variable annuity guaranteed value that was dynamically hedged at the end of 2012 was 14 per cent.

### Sales

In 2012, Asia Division achieved record sales for both insurance and wealth (excluding variable annuities) products.

**Asia Division's insurance sales** in 2012 were US$1.4 billion, an increase of 16 per cent compared with 2011. Indonesia reported sales of US$114 million, up 46 per cent from 2011, driven by an expanded Bancassurance channel which grew 140 per cent compared to 2011. Sales in Japan reached a record level of US$767 million, 11 per cent higher than the prior year's record sales, a result of strong cancer product sales in the first half of the year and increasing term sales in the second half of 2012. Sales in Hong Kong reached a record high of US$257 million, up 23 per cent over the prior year. The growth was primarily driven by expanded agency distribution, as well as continued strong sales throughout the year of our participating life product, including a run up of sales prior to price increases in the second quarter. Asia Other insurance sales (excludes sales in Hong Kong, Japan and Indonesia) of US$302 million were 15 per cent higher than 2011 driven primarily by expanded agency distribution.

**Asia Division's wealth sales** in 2012 were US$5.7 billion, an increase of 36 per cent compared with 2011. Japan sales of US$1.7 billion more than doubled the prior year and were fueled by the successful launch of the Strategic Income Fund and the continued strong sales of our foreign denominated fixed annuity product. Indonesia sales surpassed the US$1 billion milestone, driven

by strong performance in all product lines and included mutual fund sales that were seven times higher than 2011. Hong Kong sales of US$792 million were down 15 per cent from 2011, primarily as a result of a change in client preferences for bond funds over equity funds in 2012. This was partially offset by the successful start in capturing transfer cases following the November launch of the Mandatory Provident Fund's new Employee Choice Arrangement. Asia Other wealth sales (excludes sales in Hong Kong, Japan and Indonesia) of US$2.2 billion were up 13 per cent from 2011. Strong mutual fund sales in Taiwan, as well as unit linked sales in the Philippines, were the key contributors to the growth.

### Sales

| For the years ended December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| Insurance products | **$ 1,440** | $ 1,230 | $ 1,066 | **$ 1,440** | $ 1,244 | $ 1,036 |
| Wealth products | **5,690** | 4,131 | 4,530 | **5,698** | 4,186 | 4,406 |

### Premiums and Deposits

Premiums and deposits in 2012 were US$13 billion, up 28 per cent over 2011 on a constant currency basis.

Insurance premiums and deposits increased by 24 percent to US$6.7 billion in 2012 driven by higher new business sales and in-force business growth across the region, most notably in Japan.

Wealth premiums and deposits increased by 35 percent to US$6.8 billion, for the same reasons as noted in the sales section above.

### Premiums and Deposits

| For the years ended December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| Insurance products | **$ 6,650** | $ 5,311 | $ 4,512 | **$ 6,655** | $ 5,365 | $ 4,384 |
| Wealth products | **6,811** | 4,992 | 5,367 | **6,822** | 5,057 | 5,218 |
| **Total premiums and deposits** | **$ 13,461** | $ 10,303 | $ 9,879 | **$ 13,477** | $ 10,422 | $ 9,602 |

### Funds under Management

Asia Division funds under management as at December 31, 2012 were US$78 billion, an increase of 16 per cent, on a constant currency basis, compared with December 31, 2011. Growth was driven by an increase in net policyholder cash flows of US$7 billion and favourable investment returns.

### Funds under Management

| As at December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| General funds | **$ 37,798** | $ 34,757 | $ 29,077 | **$ 38,002** | $ 34,172 | $ 29,240 |
| Segregated funds | **23,435** | 23,524 | 24,026 | **23,558** | 23,130 | 24,159 |
| Mutual and other funds | **16,480** | 13,109 | 14,557 | **16,563** | 12,889 | 14,638 |
| **Total funds under management** | **$ 77,713** | $ 71,390 | $ 67,660 | **$ 78,123** | $ 70,191 | $ 68,037 |

### Strategic Direction

Asia Division continues to build a pan-Asian life insurance franchise that is well positioned to satisfy the protection and retirement needs of the fast growing customer base in the region. Our core strategy focuses on expanding our professional agency force and alternative channel distribution, growing our wealth and asset management businesses and investing in our brand across Asia. We remain committed to expanding product offerings and growing our businesses by executing on new opportunities, particularly in the wealth management space where we can leverage our asset management capabilities.

In 2012, we secured and deepened strategically important distribution agreements with key bank partners in Japan and Indonesia, achieved strong growth in our professional agency force in several key markets, and successfully expanded our presence in the Managing General Agent channel in Japan into the retail market. We also launched innovative brand building campaigns to enhance our strong global brand.

In Hong Kong, our professional agency force is now more than 5,500, and our deepened relationships with DBS Bank and CITIC Bank International enable more customers to access our professional and personalized services. To further leverage our core strength in long-term protection and savings products, we plan on further expanding our distribution in Direct Marketing/Telemarketing and independent financial advisory and broker markets, as well as enhancing our wholesaling capability. The 2012 regulatory change in the Mandatory Provident Fund, allowing employees to choose their pension asset manager for their own contributions, provides us an opportunity to grow our market share in the Pension business. Technology is a key part of our strategy and in 2012 we introduced an e-platform for our advisors to perform financial planning analysis and complete insurance applications electronically, thereby providing a more personalized experience for our customers.

In Japan, we continue to execute a growth strategy based on diversified product offerings and broadened distribution capabilities. In 2012, we achieved our fifth consecutive year of record insurance sales. The Managing General Agent channel continued to achieve strong sales in the corporate market and successfully expanded into the retail market with the launch of two new products. In the agency channel, we launched new products to further diversify our product mix. We continue to expand our wealth product line up and distribution relationships, shifting product mix away from variable annuities.

Indonesia is an increasingly important contributor to Asia Division's overall results. In 2012, our professional agency force grew by 29 per cent, and we launched several new products to further diversify our product mix away from products with long-term guarantees. With the implementation of the partnership between PT Bank Danamon Indonesia Tbk (Danamon) and Manulife in July 2012, we have significantly expanded our bank distribution capabilities. Danamon now offers a range of Manulife product solutions to a broad base of customers throughout its branch network of over 2,400 branches and service outlets countrywide. We have launched a series of protection products to address a range of insurance needs, as well as a diverse range of investment options, through unit-linked funds, that cater to the wealth accumulation needs of customers.

In the Other Asia territories, we continue to invest in our core strength of professional agency distribution, deepen our existing bank relationships, and seek new partnership distribution opportunities that offer growth and diversification opportunities. We successfully launched our Cambodian operations in June, and we had over 300 agents at the end of 2012. In China, Manulife Sinochem was licensed in 50 cities within 13 provinces and municipalities as at December 31, 2012 and has one of the broadest geographic footprints among foreign joint venture insurance companies. We will continue to grow scale in our existing locations by enhancing the productivity and professionalism of our agency force. We are also expanding into alternative distribution channels and exploring ways to capitalize on potential pension and mutual fund opportunities.

# Canadian Division

***Serving one in five Canadians, Canadian Division is one of the leading financial services organizations 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.***

***Our retail businesses provide broad-based solutions targeting middle and upper-income individuals and business owners, sold mainly through independent advisors. We offer life and living benefits insurance; mutual funds; fixed and variable annuities; investment loans and mortgages, including our innovative Manulife One product; guaranteed interest contracts and high interest savings accounts. Manulife Private Wealth offers personalized wealth management and banking solutions to high net worth customers.***

***Group life, health, disability and retirement solutions are marketed to Canadian employers through consultants and brokers, as well as independent advisors. We also provide international employee benefits management to multinational companies. Life, health and specialty products, such as travel insurance, are offered through alternative distribution channels, including sponsor groups and associations, as well as direct-to-customer marketing.***

In 2012, Canadian Division contributed 24 per cent of the Company's total premiums and deposits and, as at December 31, 2012, accounted for 25 per cent of the Company's funds under management.

### Financial Performance

Canadian Division's net income attributed to shareholders was $1,169 million in 2012 compared with $927 million for 2011. Core earnings were $835 million in 2012 compared with $849 million in 2011. Excluded from core earnings in 2012 were gains of $334 million (2011 – $78 million). These gains were comprised of $35 million related to the direct impact of equity markets and interest rates (2011 – $12 million); other investment gains of $40 million (2011 – $66 million); a $137 million gain related to the recapture of a reinsurance treaty (2011 – nil); and a $122 million reserve release related to in-force variable annuity product changes (2011 – nil). Core earnings decreased by $14 million compared with full year 2011. Year-over-year, core earnings increased due to lower new business strain as a result of pricing and product changes; changes in investment strategies; and business growth. These gains were more than offset by unfavourable claims and lapse experience and an unfavourable expense position as the business continued to reposition its new business profile.

In addition, core earnings were favourably impacted by the release of tax provisions relating to the closure of the review of prior years' tax filings in the amount of $58 million, $65 million and $186 million in 2012, 2011 and 2010, respectively.

The table below reconciles core earnings to the net income attributed to shareholders for Canadian Division for 2012, 2011 and 2010.

| **For the years ended December 31,** (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| **Core earnings**[1],[2] | **$ 835** | $ 849 | $ 1,059 |
| Items to reconcile core earnings to net income attributed to shareholders: | | | |
| Impact of major reinsurance transactions and in-force product changes[3] | **259** | – | – |
| Income (charges) on variable annuity guarantee liabilities that are dynamically hedged[4] | **50** | (278) | 13 |
| Direct impact of equity markets and interest rates[5] | **35** | 12 | (159) |
| Investment gains related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes and credit experience | **(10)** | 344 | 189 |
| **Net income attributed to shareholders** | **$ 1,169** | $ 927 | $ 1,102 |

(1) The Company moved the reporting of its International Group Program business unit from the U.S. Division to the Canadian Division in 2012. Prior period results have been restated to reflect this change.
(2) Core earnings is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.
(3) The $259 million gain includes $137 million related to the recapture of a reinsurance treaty and $122 million reserve release related to in-force variable annuity product changes.
(4) 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 amount of variable annuity guaranteed value that was dynamically hedged at the end of 2012 was 86 per cent.
(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. The gains of $35 million in 2012 (2011 – $12 million) consisted of a $4 million gain (2011 – loss of $39 million) related to variable annuities that are not dynamically hedged, nil (2011 – loss of $80 million) on general fund equity investments supporting policy liabilities and a $31 million gain (2011 – $131 million) related to fixed income reinvestment rates assumed in the valuation of policy liabilities.

### Sales

In 2012, Canadian Division achieved record sales in several business lines and continued to make significant progress in our product repositioning strategy in an unstable macro-economic environment. Through product re-design and re-pricing, combined with hedging, we have reduced the equity market and interest rate risk of our new business, while continuing to invest in the development and growth of businesses with lower capital and higher return potential. These actions are having the desired impact with increased sales diversification and a lower proportion of our overall sales from guaranteed, long-duration products.

Record insurance sales of over $1.3 billion in 2012 were twice the levels reported in 2011, driven by record sales in Group Benefits. Group Benefits' sales exceeded $1 billion, an industry record, reflecting strong one-time single premium sales and good growth across diverse market segments in Canada. Individual Insurance sales in 2012 continued to align with our strategy to reduce new business risk, with a significantly lower proportion of sales with guaranteed long-duration features compared to 2011. Manulife has led the industry with changes to guaranteed long-duration products, the anticipated impact of which was reflected in the year-over-year sales result. Sales of recurring premium individual insurance products of $254 million in 2012 were eight per cent below 2011 levels.

Canadian Division sales of wealth products exceeded $10 billion in 2012, seven per cent below 2011 levels, reflecting our actions to moderate variable annuity sales in the current macro-economic environment. GRS continued to lead the market for defined contribution sales in the Canadian group retirement industry in 2012[9] and total sales of $1.1 billion were 17 per cent higher than 2011 levels. Record mutual fund deposits exceeded $2 billion, three per cent higher than 2011, reflecting expanded distribution reach, continued strong performance in balanced and fixed income fund categories and success of a number of funds launched this year. For 2012, Manulife Mutual Funds was the fastest growing mutual fund organization in Canada based on assets under management of the top 10 fund companies reporting to The Investment Funds Institute of Canada (IFIC)[10]. Manulife Bank achieved record assets of over $21 billion at December 31, 2012, driven by strong client retention and stable new lending volumes of $4.6 billion for the year. Sales of variable annuity and fixed wealth products of $2.3 billion in 2012 were down significantly from a year ago reflecting the impact of segregated fund product changes and the continued low interest rate environment.

### Sales

**For the years ended December 31,**

| (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| Insurance products | **$ 1,310** | $ 658 | $ 657 |
| Wealth products | **10,057** | 10,784 | 10,145 |

### Premiums and Deposits

Canadian Division premiums and deposits of $18.1 billion in 2012 grew two per cent from $17.8 billion in 2011. The primary contributors of the year-over-year increase were record single premium Group Benefits sales and strong growth in our group retirement business, driven by sales and deposits from a growing block of in-force participants. These increases were dampened by a decline in sales of variable annuity and fixed wealth products.

### Premiums and Deposits

**For the years ended December 31,**

| (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| Insurance products | **$ 10,310** | $ 9,603 | $ 9,395 |
| Wealth products | **7,809** | 8,213 | 7,642 |
| **Total premiums and deposits** | **$ 18,119** | $ 17,816 | $ 17,037 |

### Funds under Management

Canadian Division funds under management grew to a record $133.2 billion as at December 31, 2012, a nine per cent increase from $122.1 billion at December 31, 2011. The increase reflects business growth across the division driven by the wealth management businesses and Manulife Bank. Net increases in asset market values as a result of lower interest rates and equity market appreciation during the last 12 months also contributed to the year-over-year increase.

### Funds under Management

**As at December 31,**

| (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| General fund | **$ 79,961** | $ 73,926 | $ 66,464 |
| Segregated funds | **44,701** | 40,826 | 40,773 |
| Mutual and other funds | **20,675** | 17,708 | 16,760 |
| Less mutual funds held by segregated funds | **(12,138)** | (10,333) | (9,546) |
| **Total funds under management** | **$ 133,199** | $ 122,127 | $ 114,451 |

[9] Based on quarterly sales survey by LIMRA, an insurance industry organization, for the year ended December 31, 2012.
[10] Based on IFIC report of mutual fund assets for top 30 fund companies in Canada, dated December 31, 2012.

**Strategic Direction**

Our vision is to be the premier broad-based, diversified financial services company in Canada, empowering our customers to prepare for their future with confidence by providing them with a comprehensive suite of financial solutions to support their most significant financial decisions. During 2012, we realigned our organization to facilitate a more holistic approach by strengthening our focus on providing comprehensive financial solutions and to provide a more consistent experience for our customers. Canadian Division businesses are now aligned into three pillars: Retail; Institutional; and Banking.

Through our broad product line, strong distribution network and high level of customer service, we have built a large customer base and leading market positions in our core businesses. We will continue to leverage these strengths and in 2012 began to realign our businesses to further enhance our customer focus. We will focus on maintaining market leading positions in our core businesses, while leveraging our strong track record to launch and grow new businesses and investing to grow lower risk, less capital intensive businesses such as Manulife Bank, Manulife Mutual Funds, Group Retirement Solutions, Affinity Markets, and our Group Benefits small business segment.

Over the past four years, we have made substantial progress in moderating our risk profile by hedging equity and interest rate exposures, as well as through product design and repricing. As a result, we have reduced the proportion of insurance and variable annuity sales coming from guaranteed, long-duration products. We have also used reinsurance opportunistically to manage risks and reduce capital requirements.

The number of affluent Canadians is increasing as the baby boomer generation ages which, together with the continuing focus of employers and governments on reducing the cost of benefits, creates opportunities for solutions focused on income growth and safety of investments, inter-generational wealth transfer and managing health care costs. These are all areas in which we excel. We will continue to focus on this target market, enhancing our suite of financial solutions to meet the evolving needs of Canadians.

We will continue to build on our reputation for product leadership with a focus on integrated solutions to meet Canadians' diverse needs. We continue to increase our focus on risk protection products with lower long-duration risk, including expanding into the mid-market consumer segment with term products and Synergy, our innovative three-in-one product that combines life, disability and critical illness insurance coverage. In 2012 we enhanced our fund platform, launching Manulife Private Investment Pools, a suite of funds aimed at affluent retail investors. In addition, we introduced Manulife Private Wealth, bringing together our expertise in banking, investments, advisory services, and estate planning to provide comprehensive personalized services to high net worth customers. Our product shelf now spans the investor spectrum, ranging from those who are just starting out, to established individuals and families with significant wealth.

In the group benefits and retirement market, we will continue to support employers in providing cost effective options to their employees, leveraging our strong market positioning. We will continue to work closely with governments and industry representatives in the development of the new Pooled Registered Pension Plan (PRPP), aimed at Canadians who do not have access to a workplace pension plan.

With over 74,000 licensed advisors and 650 Manulife sales professionals supporting them, we serve one in five Canadians. We will continue to nurture and expand relationships with our advisors. Key to success is our commitment to provide broad-based, competitive solutions, as well as efficient support to advisors to help their businesses thrive. We will continue to invest in the industry-leading professional value-added services provided by our tax and estate planning teams, as well as the wholesaler teams who market our product and sales solutions to advisors. We will also continue to develop our cross-selling and direct-to-consumer marketing capabilities.

Service quality is important in all our businesses, supporting both sales growth and customer retention. We closely monitor customer and advisor feedback to proactively improve their service experience. We continue to invest in developing e-services such as mobile and web applications, as well as improving our infrastructure and expanding capacity in our high growth businesses. We also continue to make service improvements across the Division through increased automation of customer touch-points, elimination of legacy systems, process improvement initiatives and pursuit of outsourcing and off-shoring opportunities.

# U.S. Division

***U.S. Division offers a diverse range of protection and savings products.***

***U.S. Insurance provides life and long-term care insurance products and services to select markets. John Hancock Life ("JH Life") offers a broad portfolio of insurance products, including universal, variable, whole and term life insurance designed to provide estate, business and retirement solutions for high net worth and emerging affluent markets. John Hancock Long-Term Care ("JH LTC") provides products offering care advisory services and support and financial resources that help cover the cost of long-term care in the event of an illness, accident, or through the normal effects of aging. Our long-term care products are designed for the middle income to affluent markets.***

***U.S. Wealth Management offers a broad range of personal and family oriented wealth management products and services focused on individuals and business markets, as well as institutional oriented products for employee benefit plan funding solutions. Within our John Hancock Wealth Asset Management, John Hancock Retirement Plan Services ("Retirement Plan Services") provides 401(k) plans to small and medium-sized businesses and John Hancock Mutual Funds ("Mutual Funds") offers a variety of mutual funds and 529 College Savings plans. The Annuity business manages an in-force block of fixed deferred annuities, variable deferred annuities and payout annuity products including single premium immediate annuities, participating pensions, pension close-outs and structured settlement contracts.***

***U.S. Division distributes its products through a multi-channel network, including brokerage general agents, producer groups, banks, wirehouses and broker-dealers as well as John Hancock Financial Network ("JHFN"), a national network of independent career agencies comprised of 1,600 financial representatives across the U.S., offering insurance and wealth management solutions to individuals, families and businesses.***

In 2012, U.S. Division contributed 48 per cent of the Company's total premiums and deposits and, as at December 31, 2012, accounted for 55 per cent of the Company's funds under management.

**Financial Performance**

U.S. Division reported net income attributed to shareholders of US$1,918 million for 2012 compared to US$614 million for 2011. Core earnings were US$1,088 million in 2012 compared with US$1,018 million in 2011. Excluded from core earnings in 2012 were net gains of US$830 million (2011 – losses of US$404 million). These net gains comprised other investment related gains of US$1,021 million (2011 – US$871 million), tax items related to uncertain tax positions (discussed in the Financial Performance section of this report) of US$173 million, gains related to experience on hedged variable annuity guarantee liabilities of US$123 million (2011 – losses of US$857 million) and losses of US$487 million related to the direct impact of equity markets and interest rates (2011 – losses of US$418 million).

Core earnings of US$1,088 million for 2012 increased US$70 million compared with 2011. Contributing to the increase were improved new business margins and business mix, a lower effective tax rate as we released provisions for uncertain tax positions mentioned above and higher fees from higher assets on the Wealth Management business, partially offset by unfavourable policyholder experience.

In line with the 2010 in-force repricing efforts in our JH LTC business, the Company filed for premium rate increases with 50 state regulators. The rate increases requested average approximately 40 per cent on the majority of our in-force retail and group business. As at December 31, 2012, approvals have been received from 43 states.

On a Canadian dollar basis, the net income attributed to shareholders for 2012 was $1,911 million compared to $621 million in 2011.

The table below reconciles core earnings to net income attributed to shareholders for U.S. Division for 2012, 2011 and 2010.

| For the years ended December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| **Core earnings**[1] | **$ 1,085** | $ 1,005 | $ 1,051 | **$ 1,088** | $ 1,018 | $ 1,019 |
| Items to reconcile core earnings to net income attributed to shareholders: | | | | | | |
| Investment gains related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes and credit experience | **1,018** | 857 | 485 | **1,021** | 871 | 467 |
| Impact of release of tax reserves and major reinsurance transactions[2] | **171** | – | – | **173** | – | – |
| Income (charges) on variable annuity guarantee liabilities that are dynamically hedged[3] | **121** | (844) | (175) | **123** | (857) | (167) |
| Direct impact of equity markets and interest rates[4] | **(484)** | (397) | (777) | **(487)** | (418) | (749) |
| **Net income attributed to shareholders** | **$ 1,911** | $ 621 | $ 584 | **$ 1,918** | $ 614 | $ 570 |

(1) Core earnings is a non-GAAP measure. See "Performance and Non-GAAP Measure" below.
(2) The US$173 million net gain for impact of release of tax reserves and major reinsurance transactions in 2012 includes US$172 million due to an updated assessment of prior years' uncertain tax positions and net gains of US$10 million on the Life recapture transaction offset by net losses of US$9 million on the fixed deferred annuity reinsurance transactions.
(3) 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 amount of variable annuity guaranteed value that was dynamically hedged at the end of 2012 was 60 per cent.
(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.

### Sales

In 2012, U.S. Division achieved record sales in our mutual fund and 401(k) businesses and continued to achieve success in our product repositioning strategy in a low interest rate environment. Through product redesign, repricing and business repositioning, we have reduced the equity and interest rate risk and earnings sensitivity of our product portfolio, while we continue to invest in the growth of fee-based products with lower capital requirements and higher return potential, including our 401(k), mutual fund and lower risk Insurance products. We are seeing the desired impact of these actions on our product sales mix with a continued shift away from guaranteed long-duration products in 2012.

U.S. Division sales for 2012 for insurance products were US$599 million, US$26 million or four per cent lower than 2011. Sales in JH Life increased 12 per cent. JH LTC sales declined by 61 per cent as a result of actions to increase prices and exit certain product segments as well as the non-recurrence of the 2011 open enrollment period in the Federal Long Term Care plan.

U.S. Division sales of wealth management products were US$20.2 billion, US$604 million or three per cent higher than 2011. Wealth Asset Management sales increased by 13 per cent, driven by record sales in our mutual fund and 401(k) businesses and were partially offset by the decision to stop sales of fixed and variable deferred annuities.

### Sales

| For the years ended December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| Insurance products | **$ 599** | $ 619 | $ 807 | **$ 599** | $ 625 | $ 784 |
| Wealth management products | **20,193** | 19,384 | 19,229 | **20,213** | 19,609 | 18,676 |

### Premiums and Deposits

U.S. Division total premiums and deposits for 2012 were US$36.0 billion, US$1.2 billion or three per cent higher than 2011.

Premiums and deposits for 2012 for insurance products were US$7.2 billion, US$0.1 billion higher than 2011. Growth in variable life deposits and the impact of the in-force repricing of long-term care products were mostly offset by the impact of the termination of a reinsurance assumed contract in JH Life.

Premiums and deposits for 2012 for wealth management products were US$28.8 billion, US$1.1 billion or four per cent higher than 2011. The increase is consistent with the sales results discussed above.

### Premiums and Deposits

| For the years ended December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| Insurance products | **$ 7,165** | $ 6,999 | $ 7,266 | **$ 7,168** | $ 7,070 | $ 7,060 |
| Wealth management products | **28,779** | 27,413 | 27,451 | **28,799** | 27,737 | 26,656 |
| **Total premiums and deposits** | **$ 35,944** | $ 34,412 | $ 34,717 | **$ 35,967** | $ 34,807 | $ 33,716 |

**Funds under Management**

U.S. Division funds under management as at December 31, 2012 were US$294.1 billion, up seven per cent from December 31, 2011. The increase was due to positive investment returns, the impact of lower interest rates on market value of funds under management and net sales in Wealth Asset Management, partially offset by surrender and benefit payments in JH Annuities and the transfer of US$7.2 billion of assets related to the fixed deferred annuity reinsurance transactions.

**Funds under Management**

| As at December 31, ($ millions) | Canadian $ | | | US $ | | |
|---|---|---|---|---|---|---|
| | **2012** | 2011 | 2010 | **2012** | 2011 | 2010 |
| General fund | **$ 112,389** | $ 114,939 | $ 94,756 | **$ 112,963** | $ 113,018 | $ 95,271 |
| Segregated funds | **137,931** | 129,581 | 132,218 | **138,635** | 127,415 | 132,935 |
| Mutual funds and other | **42,321** | 35,063 | 32,812 | **42,536** | 34,475 | 32,990 |
| **Total funds under management** | **$ 292,641** | $ 279,583 | $ 259,786 | **$ 294,134** | $ 274,908 | $ 261,196 |

**Strategic Direction**

U.S. Division continues to make substantive progress towards our strategic priority of continuing to grow our higher ROE, lower risk businesses. Our focus is on building a leading company in the U.S. that helps Americans with their retirement, long-term care and estate planning needs. We are leveraging our trusted brand, diverse and broad distribution, and core business strength of product innovation to profitably grow our de-risked insurance and wealth management franchises.

JH Life maintains its industry leading distribution franchise while transitioning away from guaranteed products. Our new product portfolio continues to be successful in the marketplace and in 2012 we entered the rapidly growing indexed universal life insurance market with a product that provides clients the potential to participate in equity market returns. JH Life intends to build on this success with new products and to leverage and expand our strong distribution relationships, innovative underwriting and new business processes and service to support profitable growth.

JH LTC products are designed to meet the needs of consumers arising from major gaps in U.S. social programs. We continue to work on new product design ideas that make sense in light of the low interest rate environment, while also addressing affordability of coverage and filling a gap in customers' retirement planning. Benefit Builder, our newest product, offers an innovative alternative to traditional inflation options.

U.S. Wealth Asset Management's strategy focuses on a diverse product line-up, strong investment performance, our strong and trusted brand name, industry leading distribution excellence, innovative financial solutions and superior customer service.

Mutual Funds' plans to enhance investment options through new product offerings managed by both John Hancock Asset Management and non-affiliated investment managers, and to further broaden and diversify our investment management platform. In addition, we plan to expand our penetration of institutional distributors by leveraging a strong product line and recent success in adding our funds to strategic partner recommended lists. We will continue to drive growth through expanded distribution relationships such as Edward Jones where we recently attained Preferred Fund Family status. Our retail distribution support includes national wirehouse firms, financial planners and regional/financial institutions. Our institutional distribution capacity includes Defined Contribution Investment Only, Registered Investment Advisors and managed money platforms.

Retirement Plan Services plans to maintain its strong market position in the core 401(k) small plan market segment and expand into the mid-market segment. In 2012, we launched a new mutual fund-based product and a full service group annuity product in the mid-market segment. This included new technology to support our service focus and innovative product features and benefits. Going forward, we will continue to leverage core strengths including service excellence, participant enrollment and education, distribution and field infrastructure to drive success in this market segment. In addition, the business will continue to drive growth in the 401(k) roll-over service center, expanding capabilities in educating our customers on their options during employment transitions with the goal of increasing customer retention.

Our Wealth Management businesses continue to leverage the John Hancock Lifestyle and Target Date portfolios. As of December 31, 2012, John Hancock was the fourth largest manager of assets in the U.S. for Lifestyle and Target Date funds offered through retail mutual funds and variable insurance products.[11]

In 2012, we closed our annuity business to new fixed and variable deferred annuity sales and, in March 2013, we closed new sales of our remaining annuity products including single premium and structured settlements. Providing excellent service, particularly as more of our annuity clients are entering the income phase of their life, continues to be our focus.

JHFN has consistently been a top distributor with 15 per cent share of sales in both of our insurance businesses. JHFN continues to build out its platforms to support growth in wealth management sales including the development of a fee-based managed account platform that leverages John Hancock Asset Management expertise and introducing several competitive advantages for representatives who are active in the 401(k) or Retirement Plan Services market. We continue to invest in this enterprise that provides meaningful and diversified distribution opportunities to support our growth in the Retirement Planning and Insurance markets.

We continue to leverage our strong John Hancock brand and pursue opportunities to drive the efficiency and effectiveness of our operations.

[11] Source: Strategic Insight. Includes Lifestyle and Lifecycle (Target Date) mutual fund assets and fund-of-funds variable insurance product assets (variable annuity and variable life).

# Corporate and Other

***Corporate and Other is comprised of investment performance on assets backing capital, net of amounts allocated to operating divisions and financing costs, Investment Division's external asset management business (Manulife Asset Management), our Property and Casualty ("P&C") Reinsurance business as well as our run-off reinsurance business lines including variable annuities and accident and health. Also included are the results of the Life Retrocession business prior to its sale in 2011.***

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.

As at December 31, 2012, Corporate and Other contributed 11 per cent of the Company's premiums and deposits and as at December 31, 2012, accounted for five per cent of the Company's funds under management.

**Financial Performance**

Corporate and Other reported a full year net loss attributed to shareholders of $3,313 million in 2012 compared to a net loss of $1,371 million in 2011. Core losses were $696 million in 2012 and $623 million in 2011 and both years included $200 million of total company core investment gains reported in core earnings.

Excluded from 2012 core losses were net charges of $2,617 million. Of this amount, $1,215 million related to the direct impact of equity markets and interest rates, largely comprising net experience losses from the macro equity hedges and charges due to lower URR assumptions used in the valuation of policy liabilities, $1,081 million related to changes in actuarial methods and assumptions, other than URR, $200 million related to a goodwill impairment charge and $200 million was the offset to investment gains classified as core earnings. The charges were partially offset by gains of $79 million largely related to mark-to-market investment gains and tax related items, partially offset by restructuring charges.

The $73 million increase in full year core losses was due to: increased amortization of investment losses on the Company's pension plans, lower investment income due to a combination of declining interest rates and lower average assets, higher business development expenses and higher expected macro hedging. Partially offsetting these items were the non-recurrence of $151 million P&C reinsurance charges in 2011 related to the Japan earthquake and tsunami, the subsequent release in 2012 of $44 million in excess provisions related to these events and lower accrued interest on tax provisions.

The charges related to changes in actuarial methods and assumptions are outlined in the Critical Accounting and Actuarial Policies section below.

The table below reconciles core earnings to net loss attributed to shareholders for Corporate and Other for 2012, 2011 and 2010.

| **For the years ended December 31,** (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| Core losses excluding expected cost of macro hedges and core investment gains [1] | **$ (407)** | $ (415) | $ (59) |
| Expected cost of macro hedges | **(489)** | (408) | (34) |
| Core investment gains | **200** | 200 | 200 |
| **Total core earnings (losses)** [1] | **$ (696)** | $ (623) | $ 107 |
| Items to reconcile core earnings to net loss attributed to shareholders: | | | |
| Direct impact of equity markets and interest rates [2] | **$ (1,215)** | $ 480 | $ 175 |
| Change in actuarial methods and assumptions, excluding ultimate reinvestment rate ("URR") | **(1,081)** | (751) | (1,766) |
| Goodwill impairment charge | **(200)** | (665) | (2,330) |
| Investment gains/losses related to fixed income trading, market value increases in excess of expected alternative assets investment returns, asset mix changes, credit experience and the offset to "core investment gains" | **(126)** | (115) | (247) |
| Restructuring charges | **(57)** | – | – |
| Impact of tax changes and business dispositions | **62** | 303 | – |
| **Net loss attributed to shareholders** | **$ (3,313)** | $ (1,371) | $ (4,061) |

[1] Core earnings (losses) is a non-GAAP measure. 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. Also included are gains and losses on derivatives associated with our macro equity hedges. We also include gains and losses on the sale of AFS bonds as management may have the ability to partially offset the direct impacts of changes in interest rates reported in the liability segments.

**Premiums and Deposits**

Premiums and deposits were $8.0 billion for 2012, up 126 per cent from $3.5 billion reported in 2011. This increase primarily reflects the impact of new institutional asset management mandates won by Manulife Asset Management. Premiums declined in the Life Retrocession business due to the sale of that business in 2011.

### Premiums and Deposits

**For the years ended December 31,**

| (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| Life Retrocession | **$ 2** | $ 253 | $ 491 |
| Property and Casualty Reinsurance | **95** | 113 | 75 |
| Institutional and other deposits | **7,880** | 3,164 | 2,907 |
| **Total premiums and deposits** | **$ 7,977** | $ 3,530 | $ 3,473 |

### Funds under Management

Funds under management of $28.4 billion as at December 31, 2012 (December 31, 2011 – $26.6 billion) included assets managed by Manulife Asset Management on behalf of institutional clients of $28.8 billion (2011 – $23.8 billion) and $7.1 billion (2011 – $10.6 billion) of the Company's own funds, partially offset by a $7.5 billion (2011 – $7.8 billion) total company adjustment related to the reclassification of derivative positions from invested assets to other assets and liabilities. The decline in the Company's own funds primarily reflects an increase in assets allocated to the operating divisions and the impact of the stronger Canadian dollar.

### Funds under Management

**As at December 31,**

| (C$ millions) | **2012** | 2011 | 2010 |
|---|---|---|---|
| General fund | **$ (221)** | $ 2,898 | $ 10,924 |
| Segregated funds – elimination of amounts held by the Company | **(166)** | (124) | (148) |
| Institutional advisory accounts | **28,776** | 23,778 | 24,284 |
| **Total funds under management** | **$ 28,389** | $ 26,552 | $ 35,060 |

### Strategic Direction

Our Property and Casualty Reinsurance business provides substantial retrocessional capacity for a very select clientele in the property and aviation reinsurance markets. The Company continues to monitor its exposure to natural catastrophes and manages such exposures in relation to the overall balance sheet risk and volatility.

The strategic direction for our Manulife Asset Management business is included in the Investment Division section that follows.

# Investment Division

***The Investment Division has two major businesses – management of the Company's General Fund investments and Manulife Asset Management, a leading global asset management business.***

***The General Fund is comprised of a broad range of investments including public and private bonds, public and private equities, mortgages, real estate, power and infrastructure, oil and gas, timberland and farmland properties. Our investment philosophy for the General Fund is to develop an asset mix that optimizes our risk adjusted returns and matches the characteristics of our underlying liabilities.***

***Manulife Asset Management's mission is to provide strong, reliable, trustworthy and forward-thinking investment management solutions to our clients globally. We serve our retail clients through Manulife's and John Hancock's Wealth Management groups, and directly serve institutional clients such as pension plans, foundations, endowments and financial institutions. Operating in 17 countries and territories around the world, our investment solutions encompass Public Markets, including Fixed Income and Equities as well as Real Assets (including real estate, power and infrastructure, timberland, private equity, oil and gas and farmland). We empower our investment professionals to deliver superior long-term performance based on proprietary fundamental research in a deeply resourced, team-based, highly disciplined and service-oriented operation.***

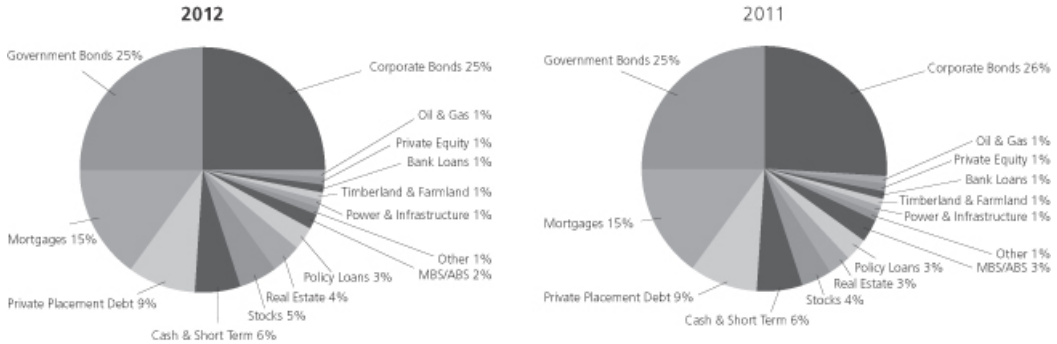
**General Fund Investment Philosophy**

Our investment philosophy employs a bottom-up approach which combines our strong asset management skills with an in-depth understanding of the characteristics of each investment. As outlined below, we are not limited to fixed income investments but rather have a diversified blend of assets, including a variety of alternative long-duration asset classes, which provides a distinctive positioning. This 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. Our risk management strategy is outlined in the Risk Management section below. This strategy has resulted in a well-diversified, high quality investment portfolio which continues to deliver strong and steady investment experience gains.

**General Fund Assets**

As at December 31, 2012, our General Fund invested assets totaled $229.9 billion compared to $226.5 billion at the end of 2011. The asset strategies are diversified by class, geography and sector.

The following charts show the asset class composition as at December 31, 2012 and December 31, 2011.




**Public Bonds and Private Placement Debt**

We manage our high quality fixed income portfolio to optimize yield and quality while ensuring that the asset portfolio remains diversified by sector, industry, duration, issuer and geography.

As at December 31, 2012, the public bond and private placement debt portfolio of $139.6 billion (2011 – $140.8 billion) was 95 per cent investment grade and 76 per cent was A or higher rated (2011 – 95 and 77 per cent, respectively). The percentage of AAA-rated public bonds and private placement debt was 29 per cent (2011 – 30 per cent). The private placement debt holdings provide diversification benefits (issuer, industry and geography) and, because they often provide stronger protective covenants and collateral than public bonds, they typically provide better credit protection and potentially higher recoveries in the event of default.

The following charts provide information on the credit quality of these assets as at December 31, 2012 and December 31, 2011.

**Public Bonds and Private Placement Debt – Credit Quality**

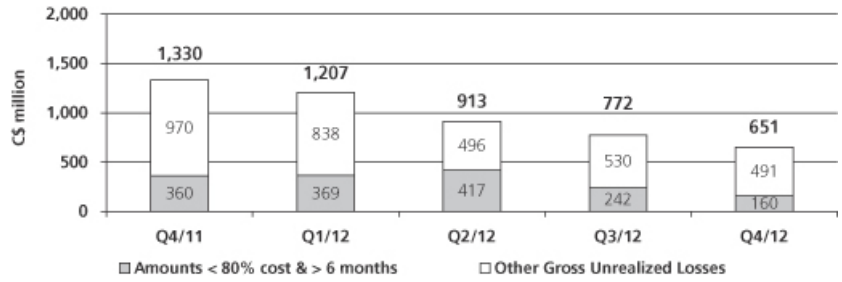



**Public Bonds and Private Placement Debt – Diversification**

| | 2012 | | | 2011 | | |
|---|---|---|---|---|---|---|
| **As at December 31,** Per cent of carrying value | Public | Private placement debt | Total | Public | Private placement debt | Total |
| Government and agency | **48** | **10** | **42** | 47 | 11 | 42 |
| Financial | **15** | **11** | **15** | 16 | 10 | 15 |
| Telecommunications | **2** | **1** | **2** | 2 | – | 2 |
| Utilities | **11** | **38** | **15** | 11 | 33 | 14 |
| Energy | **7** | **8** | **7** | 6 | 9 | 6 |
| Industrial | **5** | **8** | **5** | 4 | 10 | 5 |
| Securitized (MBS/ABS) | **3** | **–** | **3** | 5 | – | 4 |
| Consumer (non-cyclical) | **4** | **12** | **5** | 4 | 12 | 5 |
| Consumer (cyclical) | **1** | **6** | **2** | 1 | 6 | 2 |
| Basic materials | **2** | **5** | **2** | 2 | 8 | 3 |
| Technology | **1** | **–** | **1** | 1 | – | 1 |
| Media and internet | **1** | **1** | **1** | 1 | 1 | 1 |
| **Total per cent** | **100** | **100** | **100** | 100 | 100 | 100 |
| **Total carrying value (C$ billions)** | **$ 119.3** | **$ 20.3** | **$ 139.6** | $ 120.5 | $ 20.3 | $ 140.8 |

As at December 31, 2012, gross unrealized losses on our public bond and private placement debt holdings were $0.7 billion or one per cent of the amortized cost of these holdings (2011 – $1.3 billion or one per cent). Of this amount, $160 million (2011 – $360 million) relates to bonds trading below 80 per cent of cost for more than six months. Securitized assets represented $116 million of the gross unrealized losses and $80 million of the amounts trading below 80 per cent of amortized cost for more than six months (2011 – $355 million and $253 million, respectively). The following chart shows the decline in gross unrealized losses from December 31, 2011 to December 31, 2012.

**Public Bonds and Private Placement Debt – Gross Unrealized Losses**




After adjusting for bonds held in the participating policyholder and other pass-through segments, as well as the provisions for credit included in the policy liabilities, the potential impact to shareholders' pre-tax earnings for bonds trading at less than 80 per cent of amortized cost for greater than six months was approximately $93 million as at December 31, 2012 (2011 – $218 million).

### Securitized Assets

As at December 31, 2012, the Company had $3.8 billion of both public and private securitized assets representing two per cent of total invested assets (2011 – $5.7 billion and three per cent).

Commercial Mortgage Backed Securities ("CMBS") holdings at December 31, 2012 were $1.6 billion (2011 – $3.4 billion), with approximately 80 per cent of holdings rated AAA, of which approximately 99 per cent are in the most senior class. By vintage or year of origination, 81 per cent of the CMBS holdings were from years 2005 and prior.

Residential Mortgage Backed Securities ("RMBS") as at December 31, 2012 were $390 million (2011 – $407 million) of which $135 million were sub-prime and $32 million were Alt-A holdings.

Asset Backed Securities ("ABS") holdings as at December 31, 2012 were $1.8 billion (2011 – $1.9 billion) and were both highly rated and well diversified by sector.

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

| As at December 31, (C$ millions), Carrying value | 2012 CMBS | 2012 RMBS | 2012 ABS | 2012 Total | 2011 Total |
|---|---|---|---|---|---|
| AAA | **$ 1,275** | **$ 128** | **$ 1,325** | **$ 2,728** | $ 4,462 |
| AA | **7** | **66** | **24** | **97** | 139 |
| A | **76** | **22** | **156** | **254** | 300 |
| BBB | **43** | **48** | **160** | **251** | 311 |
| BB & below | **198** | **126** | **147** | **471** | 522 |
| **Total public and private securitized assets** | **$ 1,599** | **$ 390** | **$ 1,812** | **$ 3,801** | $ 5,734 |

### Mortgages

As at December 31, 2012, mortgages represented 15 per cent (2011 – 15 per cent) of invested assets with 63 per cent of the mortgage portfolio invested in Canada (2011 – 60 per cent) and 37 per cent in the United States (2011 – 40 per cent). The overall portfolio is also diversified by geographic region, property type and borrower. 31 per cent (2011 – 32 per cent) of the total mortgage portfolio is insured, primarily by Canada Mortgage and Housing Corporation ("CMHC"), Canada's AAA rated government backed national housing agency, with 61 per cent (2011 – 71 per cent) of residential mortgages insured and eight per cent (2011 – nine per cent) of commercial mortgages insured.

The following table shows the distribution of the carrying value of the mortgage portfolio by property type.

### Mortgages

| As at December 31, (C$ millions) | 2012 Carrying value | 2012 % of total | 2011 Carrying value | 2011 % of total |
|---|---|---|---|---|
| Commercial | | | | |
| Multi-family residential | **$ 3,320** | **9** | $ 3,459 | 10 |
| Retail | **5,689** | **16** | 5,816 | 17 |
| Office | **5,169** | **15** | 5,688 | 16 |
| Industrial | **2,394** | **7** | 2,888 | 8 |
| Other commercial | **1,957** | **6** | 2,197 | 6 |
| | **$ 18,529** | **53** | $ 20,048 | 57 |
| Manulife Bank single residential | **15,220** | **43** | 13,434 | 38 |
| Agriculture | **1,333** | **4** | 1,541 | 5 |
| **Total mortgages** | **$ 35,082** | **100** | $ 35,023 | 100 |

Commercial mortgages have been conservatively underwritten and accounted for 53 per cent (2011 – 57 per cent) of total mortgages. Geographically, 37 per cent are in Canada and 63 per cent in the United States. We are well diversified by property type and largely avoid risky segments of the market such as hotels, construction loans and second liens. As noted in the table below, the mortgages have low loan-to-value ratios, high debt-service coverage ratios and very few loans are in arrears.

### Non-CMHC Insured Commercial Mortgages [1],[2]

| As at December 31, | 2012 Canada | 2012 U.S. | 2011 Canada | 2011 U.S. |
|---|---|---|---|---|
| Loan-to-Value ratio [3] | **59%** | **63%** | 61% | 65% |
| Debt-Service Coverage ratio [3] | **1.48x** | **1.75x** | 1.48x | 1.58x |
| Average duration | **2.8 years** | **5.5 years** | 2.9 years | 5.1 years |
| Average loan size (C$ millions) | **$ 4.9** | **$ 10.4** | $ 4.8 | $ 10.3 |
| Loans in arrears [4] | **0.01%** | **0.00%** | 0.08% | 0.70% |

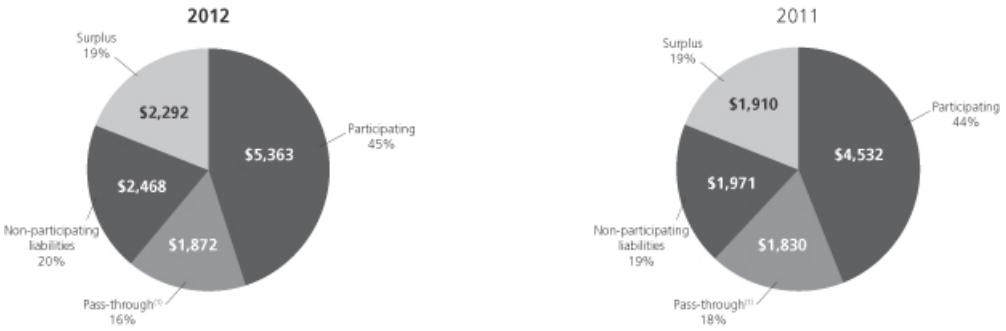
[1] CMHC is Canada Mortgage and Housing Corporation, Canada's AAA rated national housing agency.
[2] Excludes Manulife Bank commercial mortgage loans of $23 million (2011 – $12 million).
[3] Loan-to-Value and Debt-Service Coverage are based on re-underwritten cash flows.
[4] Arrears defined as over 90 days past due in Canada and over 60 days past due in the U.S.

**Public Stocks**

As at December 31, 2012, public stock holdings of $12.0 billion represented five per cent (2011 – $10.2 billion and four per cent) of invested assets. The composition of holdings by segment is outlined below. The portfolio is diversified by industry sector and issuer. Geographically, 33 per cent (2011 – 34 per cent) is held in Canada, 27 per cent (2011 – 29 per cent) is held in the U.S. and the remaining 40 per cent (2011 – 37 per cent) is held in Asia, Europe and other geographic areas.

**Public Stocks – by segment**

(C$ millions, unless otherwise stated)




(1)Equities denoted as pass-through are held by the Company to support the yield credited on equity-linked investment funds for Canadian universal life products.

**Alternative Long-Duration Assets**

This diverse range of asset classes has varying but largely uncorrelated characteristics. These are typically Real Assets representing investments in varied sectors of the economy which act as a hedge against future inflation and serve as an alternative source of asset supply to long-term Corporate bonds. As at December 31, 2012, alternative long-duration assets of $17.4 billion represented eight per cent (2011 – $15.0 billion and seven per cent) of invested assets. These investments are comprised of real estate, power and infrastructure, timberland, private equity, oil and gas and farmland. In addition to being a suitable match against our long-duration liabilities, these assets provide enhanced yields and diversification relative to traditional fixed income markets. The majority of our alternative long-duration assets are managed in-house.

The following table shows the distribution of the carrying value of the alternative long-duration assets portfolio by sector and/or asset type.

**Alternative Long-Duration Assets**

| **As at December 31,** (C$ millions) | **2012** Carrying value | **2012** % of total carrying value | 2011 Carrying value | 2011 % of total carrying value |
|---|---|---|---|---|
| Real estate | | | | |
| Office | **$ 6,168** | **35** | $ 5,296 | 35 |
| Industrial | **614** | **4** | 585 | 4 |
| Company use | **789** | **5** | 831 | 6 |
| Other | **942** | **5** | 754 | 5 |
| **Total real estate** | **$ 8,513** | **49** | $ 7,466 | 50 |
| Power and infrastructure | **2,913** | **17** | 2,507 | 17 |
| Timberland | **2,136** | **12** | 1,527 | 10 |
| Private equity | **1,761** | **10** | 1,474 | 10 |
| Oil and gas | **1,355** | **8** | 1,292 | 8 |
| Farmland | **754** | **4** | 762 | 5 |
| **Total alternative long-duration assets** | **$ 17,432** | **100** | $ 15,028 | 100 |

As at December 31, 2012, the fair value of total alternative long-duration assets was $18.2 billion (2011 – $15.8 billion).

**Real Estate**

The real estate portfolio is diversified by geographic region, with 56 per cent located in the U.S., 40 per cent in Canada and four per cent in Asia as at December 31, 2012 (December 31, 2011 – 56 per cent, 38 per cent and six per cent, respectively). The 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 94.6 per cent (2011 – 94.2 per cent) and an average lease term of 6.1 years (2011 – 5.7 years).

**Power & Infrastructure**
Investments include electrical power generation, electricity transmission, water distribution, toll roads, ports, social infrastructure investments (including schools and hospitals), and midstream gas infrastructure assets (including gas gathering, transportation, distribution and storage). The portfolio is well diversified geographically with holdings predominantly in the U.S. and Canada, but also in the U.K., Western Europe, and Australia.

**Timberland & Farmland**
The Company's timberland and farmland assets are managed by our proprietary Hancock Natural Resources Group (HNRG). In addition to being the largest institutional manager of timberland in the world with properties in the U.S., New Zealand and Australia, HNRG also manages farmland properties in the U.S., Australia and Canada. The General Fund's timberland portfolio comprises 18 per cent of HNRG's total timberland AUM. The farmland portfolio includes annual (row) crops, fruit crops, wine grapes, and nut crops. The Company's holdings comprise 41 per cent of HNRG's total farmland AUM.

**Private Equities**
Our portfolio 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 our conventional Canadian oil and gas properties which are managed by NAL Resources, which is owned by the Company. Production mix in 2012 was approximately 53 per cent crude oil, 37 per cent natural gas, and 10 per cent natural gas liquids.

**Other Invested Assets**
As at December 31, 2012, other invested assets of $3.4 billion represented one per cent (2011 – $3.5 billion and one per cent) of invested assets. Other invested assets are comprised primarily of leases, affordable housing, and other miscellaneous invested assets.

**Other Notable Items**
As at December 31, 2012, our European public and private bond net exposure represented three per cent of fixed income assets or two per cent of total invested assets (2011 – three per cent and two per cent, respectively). Excluding par and pass-through segments and reflecting the cumulative impact of downgrades reflected in our policy liability valuation, our net sovereign, banks and other financials exposure to Ireland, Italy and Spain was limited to $31 million (2011 – $47 million). We do not have any public or private bond investments in Greece or Portugal. As at December 31, 2012, we had $118 million invested in Ireland ($18 million in financials and $100 million in other corporate investments), $13 million in Italian sovereigns and $58 million in Spanish corporate bonds. Other European exposures totaled $13 million of sovereigns, $1,016 million in the financial sector and $2,545 million in other sectors. The split by country was France – $583 million, U.K. – $921 million, Germany – $327 million and other parts of Europe – $1,741 million.

The Company began writing credit default swaps ("CDS") in 2011. As outlined in the Risk Management and Risk Factors section, the Company does not employ leverage in its CDS program and, therefore, does not write CDS protection in excess of its government bond holdings. As at December 31, 2012, we had $264 million (2011 – $219 million) notional outstanding of CDS protection sold. All CDS decisions follow the same diligent underwriting standards as our cash bond portfolio and we believe the addition of this asset class allows us to better diversify our overall credit risk. Additionally, the Company does not take on any material credit or liquidity risk with its securities lending programs. The Company has avoided investing in any Structured Investment Vehicles, Constant Proportion Debt Obligations and U.S. Home Equity Lines of Credit that have resulted in significant losses to other institutions.

**Manulife Asset Management**

**Assets Under Management**
Total assets managed by Manulife Asset Management grew by $26.2 billion to $237.6 billion as at December 31, 2012 from $211.4 billion as at December 31, 2011. Assets managed for external clients grew by $23.3 billion to $201.4 billion during the same period. Our wealth management businesses' strong distribution capabilities continued to deliver gross sales globally in a challenging marketplace.

Institutional sales for our Public Markets investment teams were driven by a series of sizable mandates in 2012 that were balanced across regions and asset classes. Our Asset Allocations Solutions have also contributed to year-over-year sales growth led by our market leading target-risk Lifestyle portfolios. We raised significant capital for our Real Asset investments in 2012 and deployed it across attractive new opportunities including timberland and agriculture.

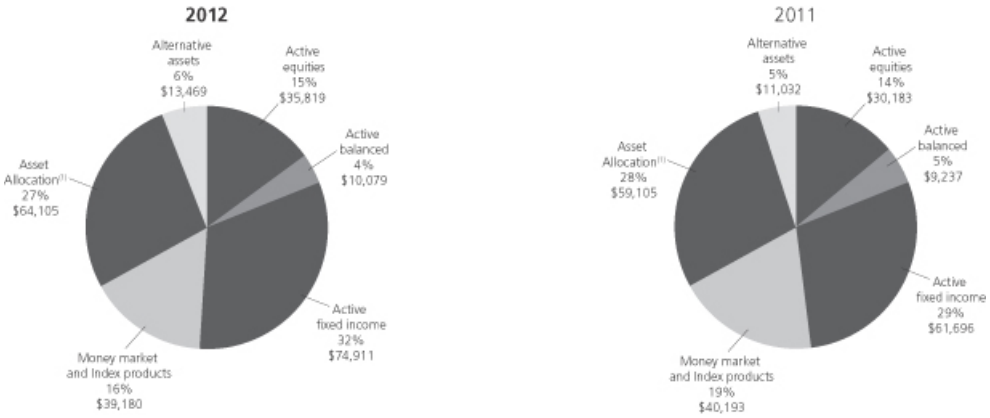
## Assets Under Management

| As at December 31, (C$ millions) | 2012 | 2011[2] | 2010 |
|---|---|---|---|
| Managed on behalf of Operating Divisions[1] | **$ 173,998** | $ 157,350 | $ 157,314 |
| Managed on behalf of Institutional clients | **27,380** | 20,773 | 19,113 |
| **Total Manulife Asset Management assets managed for external clients** [3] | **$ 201,378** | $ 178,123 | $ 176,427 |
| Managed on behalf of General Fund | **36,185** | 33,323 | 32,689 |
| **Total Manulife Asset Management assets under management** [3] | **$ 237,563** | $ 211,446 | $ 209,116 |

(1) Includes 49 per cent share of Manulife TEDA Fund Management Company Ltd., based on the joint venture ownership structure.
(2) Assets for 2011 have been restated for the transfer of Private Client Group assets from Managed on behalf of Operating Divisions to Managed on behalf of Institutional clients.
(3) An additional $2,833, $4,356, and $5,148 in 2012, 2011 and 2010, respectively, in assets were managed for external clients by Investment Division Affiliates in addition to Manulife Asset Management assets.

### Assets Under Management – Manulife Asset Management

(C$ millions, unless otherwise stated)




(1) Asset Allocation excludes $35,620 and $31,149 internally managed underlying funds in 2012 and 2011, respectively, already included in the other asset categories to avoid double-counting.

### Strategic Direction

Manulife Asset Management has made significant progress in delivering on its strategic initiatives in 2012. We now deliver more investment products, leveraging more strategies, from more teams, delivered to more client segments globally than ever before. The core of our continuing success is our strong investment performance. As at December 31, 2012, 74 per cent of our assets under management exceeded their benchmarks on a one-year basis. Over the longer term, our investment performance remained strong as 79 per cent and 71 per cent of our assets under management exceeded their benchmarks on a three-year and five-year basis, respectively.

For our Wealth Management Affiliates we delivered 65 funds rated Four- and Five-stars by Morningstar [12] at year end, an increase of seven funds since December 31, 2011. In addition, we supported our Affiliates by tailoring and launching new products to meet retail investor demand in every region in which we operate. In Canada, we supported the launch of two new large initiatives in 2012, Manulife Private Wealth and Manulife Private Investment Pools. In the U.S., we leveraged our trust operations to support John Hancock Retirement Plan Services' 401(k) initiative. In Asia and Japan, we supported our Affiliates via product and platform launches and deployment of key staff to the region to increase our responsiveness to retail client needs. In Japan, our joint efforts launched two differentiated products including a near record breaking initial public offering of a retail fund in November. In Malaysia, we supported the launch of a pension platform and similarly in Singapore, we helped launch an investment-linked plan platform.

Manulife Asset Management continued to earn awards for our strong investment capabilities in Asia. We were named the 2011 "Best Asian Bond House" by Asia Asset Management in January, and were subsequently honoured with a series of awards including two 2012 performance awards by Lipper Hong Kong, 2012 "Long-Only Fixed Income Fund Manager of the Year – Gold award" by The

[12] For each fund with at least a three 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 three, five 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.

Asset Asian Awards, a 2012 Investment Performance Award by AsianInvestor, 2012 “Most Innovative Product” Award by Asia Asset Management, and “Best Shariah Equity Fund” by Majalah Investor. In addition to this industry recognition, our Aging Asia Research Series harnessed the insights of our investment professionals and economists to assist investors preparing for the financial implications of the region’s rapidly aging populations.

Going forward, we will continue to assert our strong Fixed Income, Equity, Asset Allocation, and Real Assets investment capabilities to address the needs of our clients worldwide. Our Public Market investment teams continue to focus on global and pan-regional public market offerings in search of attractive returns and diversification. In addition, we will further leverage our leading Asset Allocation franchise to deliver multi-asset class solutions to new markets. Within Real Asset investments, we will continue to pursue acquisitions globally while providing both retail and institutional clients with enhanced opportunities for access to these investments. Across all asset classes we will continue to attract investment management talent to broaden and deepen our capabilities while maintaining our focus on providing investment solutions driven by leading investment performance and rigorous risk containment.

# Risk Management and Risk Factors

**Overview**

Manulife Financial is a financial institution offering insurance, wealth and asset management products and other financial services, which subjects the Company to a broad range of risks. We manage these risks within an enterprise-wide risk management framework. 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.

The enterprise risk management ("ERM") framework sets out policies and standards of practice related to risk governance, risk identification, risk measurement, risk monitoring, and risk control and mitigation. With an overall goal of effectively executing risk management activities, we continuously invest to attract and retain qualified risk professionals, and to build, acquire and maintain the necessary processes, tools and systems.

Risk taking activities are managed against an overall risk appetite, which defines the amount and type of risks we are willing to assume. Our risk appetite reflects the Company's financial condition, risk tolerance and business strategies. The quantitative component of our risk appetite establishes total Company targets defined in relation to economic capital, earnings at risk and regulatory capital required. We have further established targets for each of our principal risks to assist us in managing levels of exposures and risk profiles that are well diversified across risk categories. To facilitate the alignment of business strategies and plans with the Company's overall risk management objectives, targets for certain principal risks are cascaded down to our operating divisions. Our qualitative risk appetite establishes Company-wide risk management objectives and sets out the conditions under which we will, and will not, assume risk.

Risk management programs are in place for each of our broad risk categories: strategic, market, liquidity, credit, insurance and operational. These programs incorporate policies and standards of practice that are aligned with those within the enterprise risk management framework, covering:

- Assignment of risk management accountabilities across the organization;
- Philosophy and appetite related to assuming risks;
- Establishment of specific risk targets or limits;
- Delegation of authorities related to risk taking activities;
- Identification, measurement, assessment, monitoring and reporting of risks; and
- Activities related to risk control and mitigation.

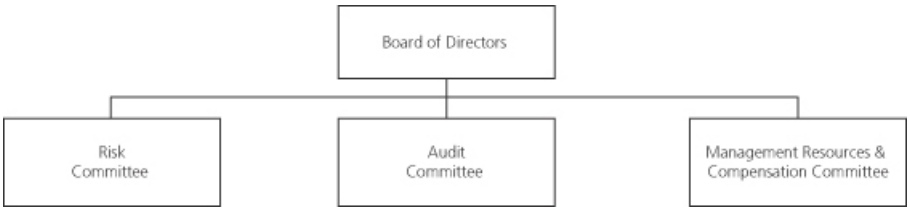
**Risk Governance**

The Board of Directors oversees the implementation by management of appropriate frameworks, processes and systems to identify and manage the principal risks of the Company's business and periodically reviews and approves our enterprise risk policy, our risk taking philosophy and overall risk appetite.

The Chief Executive Officer ("CEO") is directly accountable to the Board of Directors for all risk taking activities and risk management practices, and is supported by the Company's Chief Risk Officer ("CRO") as well as by the Executive Risk Committee ("ERC"). Together, they shape and promote our risk culture and 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. The Board and executive-level risk oversight committees and key elements of their mandates are presented below.

Corporate Risk Management ("CRM"), 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. CRM seeks to ensure a consistent enterprise-wide assessment of risk, risk-based capital and risk-adjusted returns across all operations.

**Board of Directors & Board Committees**




***Risk Committee*** – This committee is responsible for assisting the Board in its oversight of the Company's management of its principal risks. The committee also assesses, reviews and approves policies, procedures and controls in place to manage risks and reviews the Company's compliance with risk policies.

***Audit Committee*** – This 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 controls over financial reporting and the effectiveness of the Company's compliance with legal and regulatory requirements. It also oversees activities and risks related to conflicts of interest, confidentiality of information, customer complaints and related party transactions.

***Management Resources and Compensation Committee*** – This committee oversees the Company's global human resources strategy, policies, programs with a special focus on management succession, development and compensation and risk management relating to these programs.

**Executive Committees**




***Executive Risk Committee*** – The ERC approves risk policies and oversees the execution of our enterprise risk management program. The committee monitors our overall risk profile, including key and emerging risks and guides risk-taking activities. As part of these activities, the ERC monitors material risk exposures, and sponsors strategic risk management priorities including overseeing risk reduction plans. The ERC also reviews and assesses the impact of business strategies, opportunities and initiatives on our overall risk position.

***Credit Committee*** – The Credit Committee establishes credit risk policies and oversees credit risk management. The Credit Committee monitors our overall credit risk profile, key and emerging risk exposures and risk management activities and ensures compliance with credit risk policies. The committee also approves large individual credits and investments.

***Global Asset Liability Committee*** ("GALCO") – The GALCO establishes market and liquidity risk policies and oversees related market and liquidity risk and asset liability management programs and practices. The committee monitors our overall market risk profile, key and emerging risk exposures and risk management activities as well as compliance with related policies. GALCO also approves target investment strategies.

***Variable Annuity Hedging Oversight Committee*** ("VAHOC") – The VAHOC oversees global variable annuity dynamic hedging operations. The committee reviews and approves hedging strategies and operational policies and procedures. VAHOC also oversees hedge program performance and effectiveness and monitors compliance with related policies.

***Capital Committee*** – The Capital Committee oversees our capital management policy framework and provides direction on strategic issues affecting our regulatory capital for all our operating companies. The committee considers and approves internal target regulatory capital ratios and capital structure for the Company.

***Product Oversight Committee*** ("POC") – The POC establishes product design and pricing policies and insurance risk policies, as well as risk management standards of practice with regards to risks covered by these policies. It oversees the insurance risk management program and the process for approval of new product initiatives and third party reinsurance arrangements for new business. The POC monitors product design and pricing, and insurance risk across the Company, as well as, oversees underwriting and claims risk committee activities, including retention management and underwriting and claims risk oversight.

***Operational Risk Committee*** ("ORC") – The ORC oversees operational risk exposures and associated governance and risk processes. It oversees the maintenance and enhancement of our overall Operational Risk Management Framework, including implementation of our Operational Risk Management Program and overseeing specific operational risk management programs and practices. The ORC reviews and approves operational risk policies and monitors compliance with such policies.

**Risk Management Culture**

A strong risk culture and a common approach to risk management are integral to our risk management practices. Our governance framework is centered on the "three lines of defense" model.

As the first line of defense, businesses are accountable for the risks within their unit including the day to day management of the risks and related controls. They are responsible for ensuring their business strategies align with the Company's risk taking philosophy, risk appetite and culture, for thoroughly evaluating and managing risk exposures consistent with our enterprise risk policies and standards of practice, and for delivering returns commensurate with the level of risk assumed. Our businesses are supported by global risk managers and risk management professionals across the enterprise that are responsible for the design and execution of risk mitigation practices that are consistent with the Company's policies and specific risk management strategies.

The second line of defense is comprised of the CRO, the Corporate Risk Management function, global oversight functions and divisional CRO's functions. Together this group provides independent oversight of risk taking and risk mitigation activities across the enterprise. Enterprise-level risk oversight committees, including the ERC, also provide oversight of risk taking and risk mitigation activities.

As the third line of defense, Internal Audit provides independent analysis of whether controls are effective and appropriate relative to the risk inherent in the business, and whether risk mitigation programs and risk oversight functions are effective in managing risks.

**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. Business units and functional groups are responsible for identifying and assessing risks arising from business activities on an ongoing basis, as an integral component of business management processes. 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, with certain measures used across all risk categories, while others apply only to some risks or a single risk type. Risk measurement includes: key risk indicators; stress tests, including sensitivity tests and scenario impact analyses; and stochastic scenario modeling. Qualitative risk assessments are performed 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. Through our Dynamic Capital Adequacy Testing ("DCAT"), we stress test our regulatory capital adequacy over a five year projected timeframe, incorporating both existing and projected new business activities, under a number of plausible adverse scenarios. We also perform other integrated, complex scenario tests to assess key risks and the interaction of these risks.

Economic capital measures the amount of capital needed 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 and measure enterprise-wide risks and are allocated by risk type and business. Economic capital and earnings at risk provide measures of enterprise-wide risk that can be aggregated, and compared, across business activities and risk types.

**Risk Monitoring and Reporting**

CRM oversees a formal process for monitoring and reporting on enterprise-wide risk exposures, discusses risk exposures with our various risk oversight committees, and submits requests for approval of any policy exceptions or remedial action plans, as required.

On a quarterly basis, the ERC, Board Risk Committee and 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 targets and limits. The reports present information gathered through a formal risk identification and assessment process involving business unit general managers and their executive teams, as well as corporate executives overseeing global risk management of key risks. The ERC reviews key financial risk exposures and sensitivities at least monthly.

Our Group Chief Actuary presents the results of the DCAT to the Board of Directors annually. Our Internal 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 Risk Committee annually.

**Risk Control and Mitigation**

Risk control activities are in place throughout the Company to mitigate risks to within approved risk targets or 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 and such controls are an integral part of day to day activity, business management and decision making.

CRM 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.

Risk mitigation activities, such as product and investment portfolio management, hedging, reinsurance and insurance protection are used to assist in managing our aggregate risk to within our risk appetite, targets and limits. Internal controls within the business units and corporate functions mitigate our exposure to operational risks.

The following sections describe the key risks and associated risk management strategies for each of our broad risk categories (strategic, market, liquidity, credit, insurance and operational).

**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.

**Key Risk Factor Overview**

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 product features, service levels, prices, and our financial strength ratings and reputation. Erosion of our corporate image by adverse publicity, as a result of our business practices or those of our employees, representatives and business partners, may cause damage to our franchise value.

External business, economic, political, tax, legal, regulatory environments and changes to accounting or actuarial reserving standards can significantly impact the types, pricing and attractiveness of the products and services we offer. The economic environment may remain volatile and our regulatory environment, particularly in Canada, will continue to evolve, potentially with higher capital requirements which would 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 regulatory regimes we and they operate under. 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.

**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;
- Detailed strategic and business planning that is executed by divisional management and is reviewed by the CEO, the Chief Operating Officer, the Group Chief Financial Officer, the CRO and other members of the Executive Committee;
- Quarterly operational 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 reinforced by:

- An enterprise-wide reputation risk policy that specifies the oversight responsibilities of the Board 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;
- Application of a set of guiding principles in conducting all our business activities, designed to protect and enhance our reputation; and
- Reputation risk assessments considered as part of business strategy development and execution.

We regularly review and adapt our business strategies and plans in consideration of changes in the external business, economic, political, and regulatory environments in which we operate. Changes in actuarial reserving standards and changes in the cost of hedging may also cause us to review our business strategies and plans. Key elements of our business strategy include diversifying our business mix, accelerating growth of those products that have a favourable risk/return profile and better potential outcomes under a range of economic and policyholder behaviour scenarios, and reducing or withdrawing from products with unattractive risk profiles. Our strategy also incorporates a plan to continue to mitigate our in-force public equity and interest rate risks. Depending upon market conditions, these actions could result in costs which might depress income. We have designed our business plans and strategies to align with our risk appetite, capital and financial performance objectives.

The following is a further description of key strategic risk factors.

**General Macro-Economic Risk Factors**

Ongoing uncertainty surrounding the macro environment continues to impact financial market performance. In 2012, equity markets improved overall but remain volatile. Interest rates remained at historically low levels due to continuing monetary policy action and slow economic growth. Under the Canadian insurance accounting and regulatory capital regimes, the impact of the current market conditions are largely reflected in our current period results.

Weak or worsening economic conditions could result in further material charges to income and reductions in our capital position, notwithstanding our improved risk profile and strong underlying regulatory capital position.

In 2012, we revised our objective of $4 billion in net income by 2015 by roughly a year, and we are now targeting $4 billion in core earnings and core ROE of 13 per cent in 2016[13] based on our macro-economic and other assumptions. Our revised objective uses a core earnings target metric, which is consistent with measuring the underlying earnings capacity of our business.

Risk factors that may result in an inability to achieve our objectives include the following:

- Actions taken by management to bolster capital and further reduce the Company's risk profile and strengthen capital could reduce future earnings. In 2012, the Company reinsured 90 per cent of its U.S. fixed deferred annuity business and reinsured a portion of

[13] See "Caution regarding forward-looking statements".

our Japan insurance risk business. Additional actions that the Company may take to bolster near-term regulatory capital ratios or accelerate its plans to reduce equity market and interest rate exposures or to increase the amounts hedged could reduce earnings.

- A period of flat equity markets would represent underperformance relative to our long-term valuation assumption and would negatively impact earnings. In addition, as outlined below, there can be no assurance that our dynamic hedging strategy will fully offset the risks arising from the variable annuities being hedged. The publicly traded equity performance risk measures outlined below show the potential impact on net income attributed to shareholders resulting from an immediate 10, 20 and 30 per cent 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. Expected long-term annual market growth assumptions for public equities pre-dividends 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 9.6% per annum in Canada, 9.6% per annum in the U.S., 6.3% per annum in Japan and vary between 7.8% and 9.85% per annum for European equity funds. The calibration of the economic scenario generators that are used to value segregated fund guarantee business complies with current actuarial Standards of Practice for the valuation of these products. Implicit margins are determined through stochastic valuation processes which results in lower net yields used to determine policy liabilities. Assumptions used for alternative assets backing liabilities are constrained by different Standards of Practice and are marginally lower than those used in stochastic valuations. 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.
- A prolonged low interest environment would result in charges related to lower fixed income ultimate reinvestment rate assumptions and an increase in new business strain.
  - The fixed income ultimate reinvestment rate is based on five and ten year rolling averages of government bond rates. The potential impact on net income attributed to shareholders assuming government bond rates remain at December 31, 2012 levels or change by 50 basis points is outlined in the Critical Accounting and Actuarial Policies section of this report.
  - In addition, 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 rates increase.
  - Fixed income reinvestment rates other than the ultimate reinvestment rate 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” below.
- Other potential consequences of weak economic conditions include:
  - Low interest rates could negatively impact sales.
  - Lower sales volumes could put increased pressure on our ability to maintain operating expense levels within the levels provided for in the policy liability valuation and could result in lower future profit.
  - Lower risk free rates tend to increase the cost of hedging, and as a result the offering of segregated fund 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.
  - A weak or declining economic environment could increase the value of guarantees associated with variable annuities, or embedded guarantees in other annuity or insurance products, and could result in future adverse policyholder behaviour experience.
  - Lower interest rates could lead to lower mean bond parameters used for the stochastic valuation of segregated fund guarantees, resulting in higher policy liabilities. Reduced bond parameters could also be precipitated by updated Standards of Practice affecting returns in the tail segments as well as potential updates to bond calibration requirements in general.

**Regulatory and Capital Risk Factors**

MFC is a holding company with no significant operations and its principal assets are the shares of its regulated insurance subsidiaries. These subsidiaries are subject to a wide variety of insurance and other laws and regulations that vary by jurisdiction and are intended to protect policyholders and beneficiaries first and foremost, rather than investors. These laws and regulations include regulatory restrictions which may limit the ability of subsidiary companies to pay dividends or make distributions to MFC.

Financial authorities and regulators in many countries are reviewing their capital requirements and implementing or considering various changes aimed at strengthening risk management and the capitalization of financial institutions. Future regulatory capital, actuarial and accounting changes could have a material adverse effect on the Company’s consolidated financial statements and regulatory capital both on transition and going forward. The impact of these changes remains uncertain but could lead to higher levels of capital going forward. These changes could also limit the ability of the insurance subsidiaries to pay dividends or make distributions and could have a significantly adverse effect on MFC’s capital mobility, including its ability to pay dividends to shareholders, buy back its shares 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.

The Office of the Superintendent of Financial Institutions (“OSFI”) has been considering a number of changes, including establishing methodologies for evaluating standalone capital adequacy for Canadian operating life insurance companies, such as MLI, and updates to its regulatory guidance and disclosures for non-operating insurance companies acting as holding companies, such as MFC. OSFI has indicated that MCCSR and internal target capital ratio guidelines are expected to become applicable to MFC effective January 1, 2016. In addition, OSFI is evaluating possible changes to the capital requirements for segregated fund guarantees and for market, credit,

insurance and operational risk. Changes in regulatory capital guidelines for banks under the Basel Accord or for European insurance companies under Solvency II may also have implications for Canadian insurance companies. The timing and outcome of these initiatives as well as various initiatives related to International Financial Reporting Standards ("IFRS") are uncertain, and could have a significantly adverse impact on the Company or on our competitive position relative to that of other Canadian and international financial institutions with which we compete for business and capital.

Some recent examples of regulatory and professional standard developments which could impact our capital position are provided below.

- Changes to U.S. statutory accounting practices concerning actuarial reserving standards for certain universal life products pursuant to Actuarial Guideline 38 have now been promulgated by the National Association of Insurance Commissioners ("NAIC"). The new requirements for in-force business will affect policies issued since July 1, 2005 and in-force on December 31, 2012. The implementation of this standard requires actuarial judgment and interpretation. To the extent that regulatory guidance emerges that is different than our interpretations it could have a material impact on our statutory policy liabilities and local capital position.
- On December 24, 2012, the Canadian Actuarial Standards Board ("ASB") issued a Notice of Intent proposing to revise the Standards of Practice of the Canadian Institute of Actuaries with respect to the economic reinvestment assumptions and investment strategies utilized for long-tail liability cash flows under the Canadian asset liability method ("CALM"). The proposed changes are to incorporate calibration criteria for stochastic interest rate models used for CALM, to revise the deterministic scenarios to provide results comparable to those provided by the stochastic methodology, to establish maximum assumed net risk premiums which may include a possible revision to the 20 year horizon for reinvesting in corporate bonds and to establish limits on the extent to which investment in alternative assets can be assumed. Given the early stage of the ASB review, the net impact of any changes in actuarial standards on earnings and thus capital is unknown.
- Consistent with the high levels of regulatory activity internationally, the 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 2010 the International Accounting Standards Board ("IASB") issued its Insurance Contracts (Phase II) Exposure Draft and the U.S. Financial Accounting Standards Board ("FASB") issued its Insurance Contract Discussion paper. The IASB recently announced that it expects to issue a limited re-exposure draft in 2013 and the FASB announced it expects to issue an Exposure Draft in 2013. The final standards are not expected to be effective until 2018.

**The Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank")**

Dodd-Frank Title VII in the United States establishes a new framework for regulation of over-the-counter ("OTC") derivatives which could affect those activities of the Company which 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 under Dodd-Frank which take effect in 2013 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 new rules are expected to impose additional costs, including new capital and funding requirements, and additional regulation on the Company.

Derivative transactions executed through exchanges or regulated facilities will attract new incremental collateral requirements in the form of initial margin, and will require variation margin to be cash settled on a daily basis which increases liquidity risk for the Company. The increase in margin requirements combined with a more restricted list of securities that qualify as eligible collateral is expected to require us to hold larger positions in cash and treasuries, which would reduce income. Conversely, transactions executed through exchanges largely eliminate OTC counterparty credit risk but increase our exposure to the risk of an exchange or clearinghouse defaulting, and increased capital or margin requirements imposed on our OTC derivative counterparties could reduce our exposure to the counterparties' default. In force derivative transactions will be grandfathered and could migrate to exchanges over time, or the Company may elect to accelerate the migration. Similar regulations in other jurisdictions we operate in are expected to become effective in 2013 and 2014. 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 hedge.

In addition, pursuant to Dodd-Frank, on April 11, 2012, the Financial Stability Oversight Council ("FSOC") issued its final rule that describes the manner in which FSOC will designate non-bank financial institutions as "systemically important" and the procedures FSOC will use in the designation process. If designated, the largest, most interconnected and highly-leveraged companies would face stricter prudential regulation, including higher capital requirements and more robust consolidated supervision. While the final rule specifies various quantitative thresholds for use in determining which non-bank financial institutions may be designated, FSOC has left open the possibility that a non-bank financial institution could be below the thresholds and still become subject to a designation as systemically important. Since the issuance of the final rule, FSOC has been reviewing non-bank financial institutions, but has made no designations to date. At this stage, OSFI has not announced similar rules.

**International Financial Reporting Standards ("IFRS")**

The International Accounting Standards Board ("IASB") and the U.S. Financial Accounting Standards Board ("FASB") insurance contract project continue to work on a new insurance contract standard. While the IASB and FASB discuss common research papers, it is unlikely their final standards will be the same. In 2013 the IASB expects to issue a revised Exposure Draft which will include the full

text of the proposed standard but will limit questions to avoid re-opening issues which they believe have been sufficiently deliberated. The FASB is at a different stage in their standard setting process and is expected to issue a full Exposure Draft in 2013. The final standards are not expected to be effective until at least 2018.

We, along with other companies in the insurance industry from around the world, are providing feedback on the significant issues we see with the current draft proposals. To ensure the overall usefulness of the financial statements prepared under the new insurance contract standard and the new financial Instrument standards, we, along with other companies in the industry, are urging the IASB and FASB to ensure that appropriate testing is completed and would like full field testing by life insurance companies of these draft standards.

We believe the accounting rules under discussion could put Canadian insurers at a significant disadvantage relative to their U.S. and global peers, and also to the banking sector in Canada. These rules could also have adverse capital implications. The insurance industry in Canada is working with OSFI and the federal government with respect to the potential impact of these proposals on Canadian insurance companies, and the industry is urging policymakers to ensure that any future accounting and capital proposals appropriately consider the underlying business model of a life insurance company and, in particular, the implications for long-duration guaranteed products which are much more prevalent in North America than elsewhere.

**Entities within the MFC Group are interconnected which may make separation difficult**

There have been inquiries relating to the sale or spin-off of all or a part of our U.S. Division. We remain committed to our U.S. Division. In addition, linkages between MFC and its subsidiaries including our U.S. operations, may make it difficult to dispose of or separate a subsidiary within the group by way of spin-off or similar transaction. See the Company's Annual Information Form – "Risk Factors – Additional risks – Entities within the MFC Group are interconnected which may make separation difficult". In addition to the possible negative consequences outlined in such disclosure, other negative consequences could include a requirement for significant capital injections, and increased net income and capital sensitivities of MFC and its remaining subsidiaries to market declines.

**Ratings Risk Factors**

The Company has received security ratings from approved rating organizations on certain of its long-term debt, liabilities for preferred shares and capital instruments and preferred shares qualifying as equity. In addition, the Company and its primary insurance operating subsidiaries have received financial strength/claims paying ratings. Our ratings could be adversely affected if, in the view of the rating organizations, there is deterioration in our financial flexibility, operating performance, or risk profile. Adverse ratings changes could have a negative impact on future financial results.

**Reputation Risk Factors**

The Company's reputation is one of our most valuable assets. Our corporate image may be eroded by adverse publicity, as a result of our business practices or those of our employees, representatives and business partners, potentially causing damage to our franchise value. A loss of reputation is often a consequence of some other risk control failure whether associated with complex financial transactions or relatively routine operational activities. As such, reputation risk cannot be managed in isolation from other risks.

**Market Risk**

***Market risk is the risk of loss resulting from market price volatility, interest rate change, credit and swap 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 Overview**

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 targets.

The following table outlines our key market risks and identifies the risk management strategies which contribute to managing these risks.

| | 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 |

During 2012, we achieved our risk reduction targets two years earlier than originally set for public equity and interest rate risk management. These targets were to have 75 per cent of our underlying earnings sensitivity to public equity market movements offset by hedges by the end of 2014 and to reduce interest rate exposures, as measured by the sensitivity of shareholders' net income to a 100 basis point decline in interest rates to $1.1 billion as at year end 2014.

To reduce public equity risk, we use a combination of variable annuity guarantee dynamic hedging and general macro equity risk hedging strategies. As a result of our dynamic and macro hedging program, as at December 31, 2012, we estimate that approximately 72 to 83 per cent of our underlying earnings sensitivity to a 10 per cent decline in equity markets would be offset by hedges. The lower end of the range is based on the dynamically hedged assets that exist at December 31, 2012 and assumes re-balancing of equity hedges for dynamically hedged variable annuity liabilities at five per cent intervals and the upper end of the range assumes the performance of the dynamic hedging program would completely offset the loss from the dynamically hedged variable annuity guarantee liabilities. Our strategies employed for variable annuity guarantee dynamic hedging and macro equity risk hedging expose the Company to additional risks. These risks are outlined in the Publicly Traded Equity Performance Risk section below.

To reduce interest rate risk, we lengthened the duration of our fixed income investments in both our liability and surplus segments by investing cash and trading shorter term bonds for longer term bonds, and by executing lengthening interest rate swaps. These actions, partially offset by the changes in interest rates and the impact of updates to policyholder liability assumptions during the year, contributed to a net reduction in the sensitivity of net income attributed to shareholders to declines in interest rates.

Changes in the market value of fixed income assets held in our surplus segment 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 available for sale fixed income unrealized gains or losses. While we have a history of being able to realize a portion of these gains or losses, it is not certain that we would crystallize any of the unrealized gains or losses available.

During 2012 management was successful with its ongoing efforts to change our risk profile going forward demonstrating strong growth in fee based and non-guarantee business, re-pricing insurance products and closing the U.S. variable annuity business to new sales.

### Key Risk Factors

#### Publicly Traded Equity Performance Risk

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.

Our most significant source of equity risk arises from variable annuity and segregated funds with guarantees, where the guarantees are linked to the performance of the underlying funds. Guaranteed benefits are contingent and only 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 shareholders' net income 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, a sustained flat or a decline in 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.

Further, 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. In addition, 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. In addition, 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 pre-dividends 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 9.6% per annum in Canada, 9.6% per annum in the U.S., 6.3% per annum in Japan and vary between 7.8% and 9.85% per annum for European equity funds. The calibration of the economic scenario generators that are used to value segregated fund guarantee business complies with current actuarial Standards of Practice for the valuation of these products. Implicit margins are determined through stochastic valuation processes which results in lower net yields used to determine policy liabilities. Assumptions used for alternative long-duration assets backing liabilities are constrained by different Standards of Practice and result in marginally lower returns for public equities than those used in stochastic valuations. 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.

#### Interest Rate and Spread Risk

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.

Interest rate and spread 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.

A general decline in interest rates, without a change in corporate bond spreads and swap spreads, will reduce the assumed yield on future investments used in the valuation of policy liabilities, resulting in an increase in policy liabilities and a reduction in net income. A general increase in interest rates, without a change in corporate bond spreads and swap spreads, will result in a decrease in policy liabilities and an increase in net income. 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, 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.

**Alternative Long-Duration Asset Performance Risk**

Alternative long-duration asset performance risk arises from general fund investments in commercial real estate, timber properties, agricultural properties, 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. Alternative long-duration asset assumptions vary by asset class and generally have a similar impact on policy liabilities as publicly traded equities would. If actual returns are lower than the expected returns, the Company's policy liabilities will increase, reducing net income attributed to shareholders. Further, for products where the investment strategy applied to future cash flows in the policy valuation includes investing a specified portion of future policy cash flows in alternative long-duration assets, a decline in the value of these assets relative to other assets could require us to change the investment mix assumed for future cash flows, increasing policy liabilities and reducing net income. In addition, a reduction in the outlook for expected future returns for alternative long-duration assets, which could result from a fundamental change in future expected economic growth, would increase policy liabilities and reduce net income attributed to shareholders.

**Foreign Exchange Risk**

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, reported earnings 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 reported Canadian dollar earnings and shareholders' equity, and would potentially increase our regulatory capital ratios.

**Market Risk Management Strategies**

**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 targets. 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 all key features within our product offerings, including premiums and fee charges with a goal of meeting both profit and risk targets. 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 business reinsurance arrangements and material insurance underwriting initiatives must be reviewed and approved by the CRO or key individuals within Divisional and Corporate Risk Management.

**Variable Annuity Guarantee 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 both public equity and bond fund performance and interest rate movements. The objective of the 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 with, but not exactly as, our variable annuity guarantee policy liabilities, as it reflects best estimate liabilities and does not include any liability provisions for adverse deviations.

Our current 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. We may consider the use of additional hedge instruments opportunistically in the future.

We employ dynamic hedging for new variable annuity guarantee business when written, or as soon as practical thereafter, and approximately 63 per cent of our in-force variable annuity guarantee values, net of amounts reinsured, were dynamically hedged as at December 31, 2012. We intend to initiate dynamic hedging for incremental amounts of in-force business not dynamically hedged as market conditions meet our criteria. Public equity risk arising from business not dynamically hedged is managed through our macro equity risk hedging strategy and interest rate risk arising from variable annuity business not dynamically hedged is managed within our asset liability management strategy. During 2012, we initiated dynamic hedging on an additional $1.5 billion of in-force variable annuity guarantee value.

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;
- 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 second order 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.

The risks related to the variable annuity dynamic hedging strategy are described below within ‘Risks Related to Hedging Strategies’.

**Macro Equity Risk Hedging Strategy**

The macro equity risk hedging strategy is designed to hedge a portion of the shareholders’ earnings sensitivity to public equity markets movements arising from the following sources in order to maintain our overall earnings sensitivity to public equity market movements below targeted levels:

- General fund equity holdings backing non-participating liabilities;
- Variable life insurance;
- Variable annuity guarantees not dynamically hedged;
- Unhedged provisions for adverse deviation related to variable annuity guarantees dynamically hedged;
- Variable annuity fees not associated with guarantees; and
- Fees on segregated funds without guarantees, mutual funds and institutional assets managed.

We currently execute our macro equity risk hedging strategy by shorting equity futures and executing currency futures, and rolling them over at maturity. We may consider the use of alternative long maturity instruments opportunistically in the future. The notional value of equity futures contracts that were shorted as part of our macro equity risk hedging strategy as at December 31, 2012 was approximately $7.8 billion.

**Risks Related to Hedging Strategies**

Our variable annuity guarantee dynamic hedging strategy relies 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 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 dynamic hedging strategy is 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 dynamic hedging strategy there may be additional, unidentified risks that may negatively impact our business and future financial results.

The macro equity risk hedging strategy exposes the Company to risks. The strategy relies on the execution of derivative transactions and the ability to execute may be negatively impacted if markets for these instruments become illiquid. The Company is also subject to the risk of increased funding and collateral demands which may become significant as equity markets increase.

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

Canadian Institute of Actuaries 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.

**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, alternative long-duration asset performance and foreign exchange rate movements.

General fund product liabilities are segmented into groups with similar characteristics that are supported by specific asset segments. Each segment is managed 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.

We employ matching mandates, target return mandates or a combination of both in managing the assets in each segment. Matching mandates invest in fixed income assets such as publicly traded bonds, private debt and mortgages and seek to match the term profile of the liabilities, subject to the assets available in investment markets. Target return mandates invest a portion in a diversified basket of alternative long-duration assets with the remainder invested in fixed income assets and seek to generate returns sufficient to support either guaranteed obligations or to maximize policyholder dividends or credited rates subject to risk and capital constraints for products that generally pass-through investment returns to policyholders. We manage overall allocations to alternative long-duration assets to reflect our risk tolerances.

We group our liabilities into four broad categories:

- Guaranteed products with premiums and benefits that are not adjusted with changes in investment returns and interest rates. We use a combination of matching and target return mandates with the matching mandates supporting obligations within the term period for which fixed income assets are generally available in investment markets.
- Adjustable products which have benefits that are generally adjusted as interest rates and investment returns change, but which have minimum credited rate guarantees. These tend to be supported by target return mandates although segments supporting shorter term liabilities may use matching mandates.
- Variable annuity guarantee liabilities with benefits and liability amounts that fluctuate significantly with performance of the underlying segregated funds. These tend to be supported by matching mandates.
- Non-insurance liabilities which are commingled with the assets held in our surplus account. These tend to be supported by a combination of mandates.

In our general fund, we limit concentration risk associated with alternative long-duration asset performance by investing in a diversified basket of assets including public and private equities, commercial real estate, infrastructure, timber, agricultural real estate, and oil and gas assets. We further diversify risk by managing publicly traded equities and alternative long-duration asset investments against established targets and limits, including for industry type and corporate connection, commercial real estate type and geography, and timber and agricultural property geography and crop type.

Authorities to manage our investment portfolios are 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 policyholder experience and consequent liability cash flows.

**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 movements in foreign exchange rates. 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, we have a policy of generally matching the currency of the assets in our shareholders' equity account to the currency of our required capital. Where assets and liabilities are not matched, forward contracts and currency swaps are used to stabilize our capital ratios and our capital adequacy relative to economic capital, when foreign exchange rates change.

We have established target levels of risk exposure, 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. We utilize a Value-at-Risk ("VaR") methodology quarterly to estimate the potential impact of currency mismatches on our capital ratios.

While our risk management strategy is designed to stabilize capital adequacy ratios, the sensitivity of reported shareholders' equity and income to foreign exchange rate changes is not hedged.

### Sensitivities and Risk Exposure Measures

#### Caution Related to Sensitivities

In the sections that follow, we have provided 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 returns and investment activity the Company assumes in the future. 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, these 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, the Company cannot provide assurance that the actual impact on net income attributed to shareholders or on MLI's MCCSR ratio will be as indicated.

#### Variable Annuity and Segregated Fund Guarantees

Guarantees on variable 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 2015 to 2038.

The table below shows selected information regarding the Company's variable annuity and segregated fund investment related guarantees gross and net of reinsurance, and net of the business dynamically hedged.

#### Variable Annuity and Segregated Fund Guarantees

| As at December 31, (C$ millions) | 2012 Guarantee value | 2012 Fund value | 2012 Amount at risk[4] | 2011 Guarantee value | 2011 Fund value | 2011 Amount at risk[4] |
|---|---|---|---|---|---|---|
| Guaranteed minimum income benefit[1] | **$ 6,581** | **$ 4,958** | **$ 1,630** | $ 7,518 | $ 5,358 | $ 2,163 |
| Guaranteed minimum withdrawal benefit | **65,481** | **58,659** | **7,183** | 66,655 | 56,954 | 9,907 |
| Guaranteed minimum accumulation benefit | **20,380** | **21,468** | **1,383** | 23,509 | 23,030 | 2,813 |
| Gross living benefits[2] | **$ 92,442** | **$ 85,085** | **$ 10,196** | $ 97,682 | $ 85,342 | $ 14,883 |
| Gross death benefits[3] | **13,316** | **10,622** | **2,206** | 15,202 | 11,614 | 3,232 |
| Total gross of reinsurance and hedging | **$ 105,758** | **$ 95,707** | **$ 12,402** | $ 112,884 | $ 96,956 | $ 18,115 |
| Living benefits reinsured | **$ 5,780** | **$ 4,358** | **$ 1,427** | $ 6,491 | $ 4,622 | $ 1,871 |
| Death benefits reinsured | **3,673** | **3,140** | **709** | 4,360 | 3,430 | 1,104 |
| Total reinsured | **$ 9,453** | **$ 7,498** | **$ 2,136** | $ 10,851 | $ 8,052 | $ 2,975 |
| Total, net of reinsurance | **$ 96,305** | **$ 88,209** | **$ 10,266** | $ 102,033 | $ 88,904 | $ 15,140 |
| Living benefits dynamically hedged | **$ 55,464** | **$ 52,585** | **$ 4,528** | $ 55,522 | $ 50,550 | $ 6,346 |
| Death benefits dynamically hedged | **5,453** | **3,945** | **558** | 5,133 | 3,461 | 739 |
| Total dynamically hedged | **$ 60,917** | **$ 56,530** | **$ 5,086** | $ 60,655 | $ 54,011 | $ 7,085 |
| Living benefits retained | **$ 31,198** | **$ 28,142** | **$ 4,241** | $ 35,669 | $ 30,170 | $ 6,666 |
| Death benefits retained | **4,190** | **3,537** | **939** | 5,709 | 4,723 | 1,389 |
| **Total, net of reinsurance and dynamic hedging** | **$ 35,388** | **$ 31,679** | **$ 5,180** | $ 41,378 | $ 34,893 | $ 8,055 |

(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 as outlined in footnote (3).
(3) Death benefits include standalone 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 net 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 net amount at risk is defined as the excess of the current annuitization income base over the current account value. For all guarantees, the net amount at risk is floored at zero at the single contract level.

As at December 31, 2012, approximately 67 per cent of the variable annuity and segregated fund guarantee value was either dynamically hedged or reinsured, compared to 63 per cent at December 31, 2011. The business dynamically hedged at December 31, 2012 comprises 63 per cent of the variable annuity guarantee values, net of amounts reinsured.

The policy liabilities established for these benefits were $7,948 million at December 31, 2012 (2011 – $10,021 million). These policy liabilities include the policy liabilities for both the hedged and the unhedged business. For unhedged business, policy liabilities were $2,695 million at December 31, 2012 (2011 – $3,586 million). The policy liabilities for the hedged block were $5,253 million at December 31, 2012 (2011 – $6,435 million). The decrease in the policy liabilities for the hedged block was primarily due to the favourable impact of equity market movements and the increase in swap rates reducing the expected cost of hedging, partly offset by the adverse impact from changes in actuarial methods and assumptions. The year-over-year decrease in policy liabilities related to the unhedged business was due primarily to the favourable impact of improved public equity markets, partly offset by the adverse impacts from changes in actuarial methods and assumptions and interest rate movements.

The following table shows the notional value of shorted equity futures contracts utilized for our variable annuity guarantee dynamic hedging and our macro equity risk hedging strategies.

**Notional value of shorted equity futures contracts**

| **As at December 31,** (C$ millions) | **2012** | 2011 |
|---|---|---|
| For variable annuity guarantee dynamic hedging strategy [1] | **$ 9,500** | $ 10,600 |
| For macro equity risk hedging strategy | **7,800** | 5,600 |
| **Total** | **$ 17,300** | $ 16,200 |

[1] Reflects net short and long positions for exposures to similar exchanges.

**Publicly Traded Equity Performance Risk**

As a result of our dynamic and macro hedging program, as at December 31, 2012, we estimate that approximately 72 to 83 per cent of our underlying earnings sensitivity to a 10 per cent decline in equity markets would be offset by hedges. The lower end of the range is based on the dynamically hedged assets that exist at December 31, 2012 and assumes re-balancing of equity hedges for dynamically hedged variable annuity liabilities at 5 per cent intervals and the upper end of the range assumes the performance of the dynamic hedging program would completely offset the loss from the dynamically hedged variable annuity guarantee liabilities. The range at December 31, 2011 was 59 to 70 per cent. We have achieved our stated goal to have approximately 75 per cent of the underlying earnings sensitivity to equity markets offset by hedges by the end of 2014. However, there can be no assurance that our exposure to public equity markets will remain below year end 2014 targets.

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 tables below show the potential impact on net income attributed to shareholders resulting from an immediate 10, 20 and 30 per cent 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, including embedded derivatives. The potential impact is shown before and after taking into account the impact of the change in markets on the hedge assets. The potential impact is shown assuming that (a) the change in value of the hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities, including the provisions for adverse deviation and (b) that the change in value is not completely offset. In the fourth quarter 2012 we refined our methodology related to the estimated amount that would not be completely offset. The refinement in methodology assumes that provision for adverse deviation is not offset and that the hedge assets are based on the actual position at the period end. (Previously the methodology assumed that for a 10, 20 and 30 per cent decrease in the market value of equities, the profit from the hedge assets offsets 80, 75 and 70 per cent, respectively, of the loss arising from the change in the policy liabilities associated with the guarantees dynamically hedged. For a 10, 20 and 30 per cent market increase in the market value of equities, the loss on the dynamic hedges was assumed to be 120, 125 and 130 per cent of the gain from the dynamically hedged variable annuity guarantee liabilities, respectively.)

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 shareholders' net income. It is also important to note that these estimates are illustrative, and that the hedge 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.

## Potential impact on net income attributed to shareholders arising from changes to public equity returns [1]

| As at December 31, 2012<br>(C$ millions) | -30% | -20% | -10% | 10% | 20% | 30% |
|---|---|---|---|---|---|---|
| **Underlying sensitivity to net income attributed to shareholders**[2] | | | | | | |
| Variable annuity guarantees | $ (5,640) | $ (3,510) | $ (1,580) | $ 1,260 | $ 2,220 | $ 2,930 |
| Asset based fees | (270) | (180) | (90) | 90 | 180 | 270 |
| General fund equity investments[3] | (380) | (260) | (130) | 120 | 230 | 350 |
| **Total underlying sensitivity** | **$ (6,290)** | **$ (3,950)** | **$ (1,800)** | **$ 1,470** | **$ 2,630** | **$ 3,550** |
| **Impact of hedge assets** | | | | | | |
| Impact of macro hedged assets | $ 2,010 | $ 1,340 | $ 670 | $ (670) | $ (1,340) | $ (2,010) |
| Impact of dynamic hedge assets assuming the change in the value of the hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities[4] | 3,070 | 1,890 | 820 | (600) | (1,000) | (1,300) |
| **Total impact of hedge assets assuming the change in value of the dynamic hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities**[4] | **$ 5,080** | **$ 3,230** | **$ 1,490** | **$ (1,270)** | **$ (2,340)** | **$ (3,310)** |
| **Net impact assuming the change in the value of the hedged assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities**[4] | **$ (1,210)** | **$ (720)** | **$ (310)** | **$ 200** | **$ 290** | **$ 240** |
| Impact of assuming that the provisions for adverse deviation for dynamically hedged liabilities are not offset and that the hedging program rebalances at 5% market intervals[5] | (710) | (470) | (190) | (10) | (50) | (70) |
| **Net impact assuming the change in value of the dynamic hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities**[5] | **$ (1,920)** | **$ (1,190)** | **$ (500)** | **$ 190** | **$ 240** | **$ 170** |
| **Percentage of underlying earnings sensitivitiy to movements in equity markets that is offset by hedges if dynamic hedge assets completely offset the change in the dynamically hedged variable annuity guarantee liability** | **81%** | **82%** | **83%** | **86%** | **89%** | **93%** |
| **Percentage of underlying earnings sensitivity to movements in equity markets that is offset by hedge assets if dynamic hedge assets do not completely offset the change in the dynamically hedged variable annuity guarantee liability**[5] | **69%** | **70%** | **72%** | **87%** | **91%** | **95%** |

[1] See "Caution Related to Sensitivities" above.

[2] 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.

[3] 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 public equities held in the Corporate and Other segment; or (iii) any gains or losses on public equity investments held in Manulife Bank. The sensitivities assume that the participating policy funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in equity markets.

[4] Best estimate liabilities and associated provisions for adverse deviation.

[5] Represents the impact of rebalancing equity hedges for dynamically hedged variable annuity guarantee liabilities at 5% market intervals. Also, represents the impact of changes in markets on provisions for adverse deviation that are not hedged, but does not include any impact in respect of other sources of hedge ineffectiveness, e.g. basis risk, realized volatility and equity, interest rate correlations different from expected among other factors. For presentation purposes, numbers are rounded.

### Potential impact on net income attributed to shareholders arising from changes to public equity returns [1]

| As at December 31, 2011<br>(C$ millions) | -30% | -20% | -10% | 10% | 20% | 30% |
|---|---|---|---|---|---|---|
| **Underlying sensitivity to net income attributed to shareholders**[2] | | | | | | |
| Variable annuity guarantees | $ (6,080) | $ (3,830) | $ (1,780) | $ 1,490 | $ 2,720 | $ 3,690 |
| Asset based fees | (260) | (180) | (80) | 90 | 180 | 260 |
| General fund equity investments[3] | (300) | (200) | (110) | 100 | 200 | 300 |
| **Total underlying sensitivity** | $ (6,640) | $ (4,210) | $ (1,970) | $ 1,680 | $ 3,100 | $ 4,250 |
| **Impact of hedge assets** | | | | | | |
| Impact of macro hedged assets | $ 1,420 | $ 950 | $ 470 | $ (470) | $ (950) | $ (1,420) |
| Impact of dynamic hedge assets assuming the change in the value of the hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities[4] | 3,170 | 1,980 | 900 | (710) | (1,240) | (1,610) |
| **Total impact of hedge assets assuming the change in value of the dynamic hedge assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities**[4] | $ 4,590 | $ 2,930 | $ 1,370 | $ (1,180) | $ (2,190) | $ (3,030) |
| **Net impact assuming the change in the value of the hedged assets completely offsets the change in the dynamically hedged variable annuity guarantee liabilities**[4] | $ (2,050) | $ (1,280) | $ (600) | $ 500 | $ 910 | $ 1,220 |
| Impact of assuming that the provisions for adverse deviation for dynamically hedged liabilities are not offset and that the hedging program rebalances at 5% market intervals[5] | (700) | (460) | (200) | (10) | (20) | (30) |
| **Net impact assuming the change in value of the dynamic hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities**[5] | $ (2,750) | $ (1,740) | $ (800) | $ 490 | $ 890 | $ 1,190 |
| **Percentage of underlying earnings sensitivitiy to movements in equity markets that is offset by hedges if dynamic hedge assets completely offset the change in the dynamically hedged variable annuity guarantee liability** | 69% | 70% | 70% | 70% | 71% | 71% |
| **Percentage of underlying earnings sensitivity to movements in equity markets that is offset by hedge assets if dynamic hedge assets do not completely offset the change in the dynamically hedged variable annuity guarantee liability**[5] | 59% | 59% | 59% | 71% | 71% | 72% |

[1] See "Caution Related to Sensitivities" above.
[2] 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.
[3] 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 public equities held in the Corporate and Other segment; or (iii) any gains or losses on public equity investments held in Manulife Bank. The sensitivities assume that the participating policy funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in equity markets.
[4] Best estimate liabilities and associated provisions for adverse deviation.
[5] Represents the impact of rebalancing equity hedges for dynamically hedged variable annuity guarantee liabilities at 5% market intervals. Also, represents the impact of changes in markets on provisions for adverse deviation that are not hedged, but does not include any impact in respect of other sources of hedge ineffectiveness, e.g. basis risk, realized volatility and equity, interest rate correlations different from expected among other factors. For presentation purposes, numbers are rounded.

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 impact on MLI's MCCSR ratio arising from public equity returns different than the expected return for policy liability valuation[1],[2],[3]

| As at December 31, | 2012 | | | | | | 2011 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -30% | -20% | -10% | 10% | 20% | 30% | -30% | -20% | -10% | 10% | 20% | 30% |
| Impact on MLI MCCSR (percentage points) | **(17)** | **(11)** | **(5)** | **1** | **2** | **6** | (27) | (15) | (7) | 2 | 3 | 4 |

[1] See "Caution Related to Sensitivities" above.
[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, including the provisions for adverse deviation. The estimated amount that would not be completely offset assumes that provision for adverse deviation is not offset and that the hedge assets are based on the actual position at the period end.
[3] Sensitivities above do not include the impact of equity markets on the Company's own pension plans as a result of 2013 MCCSR Guideline changes (see section "Capital Management Framework – Regulatory Capital Position" for further details).

**Interest Rate and Spread Risk**

The following table shows the potential impact on net income attributed to shareholders of a change of one per cent, 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, relative to the rates assumed in the valuation of policy liabilities, including embedded derivatives. We also assume no change to the ultimate reinvestment rate ("URR").

**Potential impact on annual net income attributed to shareholders of an immediate one per cent parallel change in interest rates relative to rates assumed in the valuation of policy liabilities**[1],[2],[3],[4],[5]

| **As at December 31,** | **2012** | | 2011 | |
|---|---|---|---|---|
| (C$ millions) | -100bp | +100bp | -100bp | +100bp |
| General fund products[2] | **$ (200)** | **$ –** | $ (500) | $ 350 |
| Variable annuity guarantees[3] | **(200)** | **200** | (500) | 350 |
| **Total** | **$ (400)** | **$ 200** | $ (1,000) | $ 700 |

(1) See "Caution Related to Sensitivities" above.
(2) The sensitivities assume that the participating policy funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in interest rates.
(3) For variable annuity liabilities that are dynamically hedged, it is assumed that interest rate hedges are rebalanced at 20 basis point intervals.
(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 and investment market and activities 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.
(5) For general fund adjustable benefit products subject to minimum rate guarantee, the sensitivities are based on the assumption that credited rates floored at the minimum.

The decline in sensitivity was primarily driven by the actions to extend the duration of our fixed income investments supporting policyholder liabilities. These impacts were partially offset by generally lower interest rates in the markets where we operate and the impact of increases to policy liabilities as a result of our annual review of policy valuation assumptions.

The 100 basis point parallel decline includes a change of one per cent 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 and corporate spreads, relative to the rates assumed in the valuation of policy liabilities, including embedded derivatives. Based on interest rates at the end of 2011 and 2012, a 100 basis point decline in interest rates would result in a movement to a different prescribed reinvestment scenario for policy liability valuation in some jurisdictions, which would produce a higher reserve. The potential earnings impact of a 100 basis point decline in interest rates in 2011 and 2012 includes approximately $500 and $200 million, respectively, related to the impact of the scenario change. This amount would be expected to reduce over time, should risk free rates remain unchanged, as the ultimate reinvestment rate moves toward current risk free rates. Further, as the sensitivity to a 100 basis point decline in interest rates includes the impact of the change in prescribed reinvestment scenarios, the impact of changes to interest rates for less than, or more than, the amounts indicated are unlikely to be linear. For variable annuity guarantee liabilities that are dynamically hedged, it is assumed that interest rate hedges are rebalanced at 20 basis point intervals.

The potential impact on annual net income attributed to shareholders provided in the table above does not allow for any future potential changes to the URR assumptions or other potential impacts of lower interest rate levels, for example, increased strain on the sale of new business, lower interest earned on our surplus assets, or updates to actuarial assumptions related to variable annuity bond fund calibration. It also does not reflect any impact arising from the sale of 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, 2012, the AFS fixed income assets held in the surplus segment were in a net after-tax unrealized gain position of $218 million (gross after-tax unrealized gains were $364 million and gross after-tax unrealized losses were $146 million).

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 one per cent parallel change in interest rates relative to rates assumed in the valuation of policy liabilities**[1],[2],[3],[4]

| As at December 31, | 2012 | | 2011 | |
|---|---|---|---|---|
| | -100bp | +100bp | -100bp | +100bp |
| **Net income attributed to shareholders** (C$ millions): | | | | |
| Excluding change in market value of AFS fixed income assets held in the surplus segment | **$ (400)** | **$ 200** | $ (1,000) | $ 700 |
| From fair value changes in AFS assets held in surplus, if realized | **800** | **(700)** | 800 | (700) |
| **MLI's MCCSR ratio** (Percentage points): | | | | |
| Before impact of change in market value of AFS fixed income assets held in the surplus segment [5] | **(16)** | **10** | (18) | 13 |
| From fair value changes in AFS assets held in surplus, if realized | **5** | **(5)** | 5 | (5) |

(1) See "Caution Related to Sensitivities" above.
(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. The table above only reflects the impact of the change in the unrealized position, as the total unrealized position will depend upon the unrealized position at the beginning of the period.
(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 100% of market value of 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 11 of the 16 points impact of a 100 bp decline in interest rates on MLI's MCCSR ratio.

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 annual net income attributed to shareholders arising from changes to corporate spreads** (1),(2),(3),(4)

| As at December 31, (C$ millions) | 2012 | | 2011 | |
|---|---|---|---|---|
| | -50bp | +50bp | -50bp | +50bp |
| **Corporate spreads** | **$ (1,000)** | **$ 500** | $ (900) | $ 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 segregated fund bond fund value arising from changes in credit spreads. The sensitivities assume that the participating policy funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in corporate spreads.
(3) Corporate spreads are assumed to grade to the long-term average over five years. Sensitivities to 50 basis point change in corporate spreads were estimated at December 31, 2011.
(4) 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 and investment market and activities 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.

Based on spreads at the end of 2011 and 2012, a 50 basis point decline in corporate spreads would result in a movement to a different prescribed reinvestment scenario for policy liability valuation in some jurisdictions, which would produce a higher reserve. The potential earnings impact of a 50 basis point decline in 2011 and 2012 includes approximately $300 and $400 million, respectively, related to the impact of the scenario change. This amount would be expected to reduce over time, should risk free rates remain unchanged, as the ultimate reinvestment rate moves toward current risk free rates. Further, as the sensitivity to a 50 basis point decline in corporate spreads includes the impact of the change in prescribed reinvestment scenarios, the impact of changes to corporate spreads for less than, or more than, the amounts indicated are unlikely to be linear.

The sensitivity of shareholders' net earnings to changes in corporate spreads increased over 2011, primarily due to the change to a different prescribed reinvestment scenario as described above and the decline in interest rates over the year.

**Potential impact on annual net income attributed to shareholders arising from changes to swap spreads** (1),(2),(3)

| As at December 31, (C$ millions) | 2012 | | 2011 | |
|---|---|---|---|---|
| | -20bp | +20bp | -20bp | +20bp |
| **Swap spreads**[2] | **$ 600** | **$ (600)** | $ 600 | $ (600) |

(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 segregated fund bond fund value arising from changes in credit spreads. The sensitivities assume that the participating policy funds are 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 and investment market and activities 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.

The sensitivity of net income attributed to shareholders to changes in swap spreads is largely unchanged year-over-year.

### Alternative Long-Duration Asset Performance Risk

The following table shows the potential impact on net income attributed to shareholders resulting from changes in market values of alternative long-duration assets different than the expected levels assumed in the valuation of policy liabilities.

**Potential impact on net income attributed to shareholders arising from changes in alternative long-duration asset returns** [1],[2]

| As at December 31, (C$ millions) | 2012 | | 2011 | |
|---|---|---|---|---|
| | -10% | +10% | -10% | +10% |
| Real estate, agriculture and timber assets | **$ (900)** | **$ 900** | $ (750) | $ 750 |
| Private equities and other alternative long-duration assets | **(800)** | **700** | (550) | 550 |
| **Alternative long-duration assets** | **$ (1,700)** | **$ 1,600** | $ (1,300) | $ 1,300 |

[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 alternative long-duration asset weightings; (ii) any gains or losses on alternative long-duration assets held in the Corporate and Other segment; or (iii) any gains or losses on alternative long-duration assets held in Manulife Bank. The sensitivities assume that the participating policy funds are self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in alternative long-duration asset returns. Net income impact does not consider any impact of the market correction on assumed future return assumptions.

The increased sensitivity from December 31, 2011 to December 31, 2012 is primarily related to the decline in fixed income rates (reducing the rate at which funds can reinvest), as well as the increase in market value of the alternative long-duration assets over the year.

### Foreign Exchange Risk

The following table shows the impact on net income attributed to shareholders of a 10 per cent change in the Canadian dollar relative to our key operating currencies.

**Potential impact on net income attributed to shareholders** [1]

| As at December 31, (C$ millions) | 2012 | | 2011 | |
|---|---|---|---|---|
| | +10% strengthening | -10% weakening | +10% strengthening | -10% weakening |
| 10% change relative to the U.S. Dollar | **$ (150)** | **$ 150** | $ 100 | $ (100) |
| 10% change relative to the Japanese Yen | **(100)** | **100** | (10) | 10 |

[1] See "Caution Related to Sensitivities" above. Due to U.S. dollar denominated losses experienced in 2011, a strengthening of the Canadian dollar relative to the U.S. dollar would have reduced these losses and, therefore, would have had a positive impact on shareholders' earnings.

The following table shows the impact on shareholders' equity of a 10 per cent change in the Canadian dollar relative to our key operating currencies.

**Potential impact on shareholders' equity** [1]

| As at December 31, (C$ millions) | 2012 | | 2011 | |
|---|---|---|---|---|
| | +10% strengthening | -10% weakening | +10% strengthening | -10% weakening |
| 10% change relative to the U.S. Dollar | **$ (1,700)** | **$ 1,700** | $ (1,600) | $ 1,600 |
| 10% change relative to the Japanese Yen | **(300)** | **300** | (300) | 300 |

[1] 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.***

### Key Risk Factors

Manulife Financial 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. The implementation of Dodd-Frank in the United States in 2013 will require certain derivatives to migrate from bilateral arrangements to clearinghouses, and this is expected to increase liquidity requirements to support these contracts. The transition to clearinghouses will occur over time and the risks do not become a significant issue for Manulife until a large portion of our derivatives have transitioned to central clearinghouses and market conditions adverse to liquidity (material changes in interest rates and/or equity markets) have been experienced.

The ability of our holding company to fund its cash requirements depends upon it receiving dividends, distributions and other payments from our operating subsidiaries. These subsidiaries are generally required to maintain solvency and capital standards imposed by their local regulators and, as a result, may have restrictions on payments which they may make to MFC.

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 repricing risk and under adverse conditions increases in costs will 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 at the operating company level. 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. Although the Company did not experience any material change in aggregate capacity during the recent global financial crisis, changes in prices and conditions were adverse during the market turbulence. There were no assets pledged against these outstanding letters of credit as at December 31, 2012.

**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 take into account any legal, regulatory, tax, operational or economic impediments to inter-entity funding.

We seek to reduce 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 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.

Through the normal course of business, pledging of assets is required to comply with jurisdictional regulatory and other requirements including collateral pledged to 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 $274.4 billion as at December 31, 2012 (2011 – $261.8 billion).

We manage the asset mix of our balance sheet taking into account the need to hold adequate unencumbered and appropriate liquid assets to satisfy the potential additional requirements arising under stressed scenarios and to allow our liquidity ratios to remain strong.

**Risk Exposure Measures**

Consolidated group operating and strategic liquidity levels are managed against established minimums. We set minimum operating liquidity above the level of the highest one month's operating cash outflows projected over the next 12 months. We measure strategic liquidity under both immediate (within one month) and ongoing (within one year) stress scenarios. Our policy is to maintain the ratio of adjusted liquid assets to adjusted policy liabilities at or above a pre-established target. Adjusted liquid assets include unencumbered cash and short-term investments, and marketable bonds and stocks that are discounted to reflect convertibility to cash, net of maturing debt obligations. Policy liabilities are adjusted to reflect their potential for withdrawal.

In addition to managing the consolidated liquidity levels, each entity maintains sufficient liquidity to meet its standalone demands.

Our strategic liquidity ratios are provided in the following table.

| **As at December 31,** (C$ millions, unless otherwise stated) | **2012** Immediate Scenario | **2012** Ongoing Scenario | 2011 Immediate Scenario | 2011 Ongoing Scenario |
|---|---|---|---|---|
| Adjusted liquid assets | **$ 123,776** | **$ 122,863** | $ 123,429 | $ 124,685 |
| Adjusted policy liabilities | **$ 25,778** | **$ 33,540** | $ 27,452 | $ 35,656 |
| Liquidity ratio | **480%** | **366%** | 450% | 350% |

Additionally, the market value of our derivative portfolio is periodically stress tested based on market shocks to assess the potential collateral and cash settlement requirements under stressed conditions. Increased use of derivatives for hedging purposes has necessitated greater emphasis on measurement and management of contingent liquidity risk. Comprehensive liquidity stress testing measures, on an integrated basis, the impact of market shocks on derivative collateral and margin requirements, reserve requirements,

reinsurance settlements, policyholder behaviour and the market value of eligible liquid assets. Stressed liquidity ratios are measured against established targets.

Manulife Bank has a liquidity risk management policy framework, managed on a standalone basis. 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.

**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.***

**Key Risk Factors**

Worsening or continued poor economic conditions 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.

**Risk Management Strategy**

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 investment grade bonds and commercial mortgages. While we have minimal exposure to credit default swaps, we have a program for selling CDS that employs a highly selective, diversified and conservative approach. All CDS decisions will follow the same rigorous underwriting standards as our cash bond portfolio and we believe the addition of this asset class will allow 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 each investment 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. We refer all major credit decisions to the Credit Committee and the largest credit decisions to the CEO for approval and, in certain cases, to 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. We require all reinsurance counterparties and insurance providers to meet minimum risk rating criteria.

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. CRM 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. We set these conservatively, taking into account average historical levels and future expectations, with a provision for adverse deviations. Fluctuations in credit default rates and deterioration in credit ratings of borrowers may result in losses if actual rates exceed expected rates.

Throughout the recent challenging credit environment, our credit policies and procedures and investment strategies have remained fundamentally unchanged. Credit exposure in our investment portfolio is actively managed to reduce risk and mitigate losses and derivative counterparty exposure is managed proactively. Defaults and downgrade charges were generally below the historical average in 2012, however, we still expect volatility on a quarterly basis and losses could potentially rise above long-term expected levels.

### Risk Exposure Measures

As at December 31, 2012 and December 31, 2011, for every 50 per cent that credit defaults over the next year exceed the rates provided for in policy liabilities, net income attributed to shareholders would be reduced by $56 million and $63 million, respectively. Downgrades could also be higher than assumed in policy liabilities resulting in policy liability increases and a reduction in net income.

The table below shows net impaired assets and allowances for loan losses.

### Net Impaired Assets and Loan Losses

| **As at December 31,** (C$ millions, unless otherwise stated) | **2012** | 2011 |
|---|---|---|
| Net impaired fixed income assets | **$ 337** | $ 486 |
| Net impaired fixed income assets as a per cent of total invested assets | **0.15%** | 0.21% |
| Allowance for loan losses | **$ 89** | $ 94 |

### 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.***

### Key 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 based on both Company and industry experience and predictive models, and assumptions for future policyholder behavior are based on Company experience and predictive models. Assumptions for future policyholder behaviour include assumptions related to the retention rates for insurance and wealth products. Losses may result should actual experience be materially different than that assumed in the design, pricing and sale of products. 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.

Life and health insurance claims may be impacted by the unusual onset of disease or illness, natural disasters, large-scale man-made disasters and acts of terrorism. The ultimate level of lifetime benefits paid to policyholders may be impacted by unexpected changes in life expectancy. 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, underwriting process failures, or other factors.

We purchase reinsurance protection on certain risks underwritten by our various business segments. External market conditions determine the availability, terms and cost of the reinsurance protection for new business and, in certain circumstances, the cost of reinsurance for business already reinsured. Accordingly, we may be forced to incur additional costs for reinsurance or may not be able to obtain sufficient reinsurance on acceptable terms, which could adversely affect our ability to write future business or result in the assumption of more risk with respect to those policies we issue.

### Risk Management Strategy

We have established a broad framework for managing insurance risk under our Product Design and Pricing Policy, Underwriting and Claims Management Policy and Reinsurance Risk Management Policy, as well as supporting global product design and pricing standards and guidelines, and reinsurance guidelines, aimed to help ensure our product offerings align with our risk taking philosophy and risk targets, 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, we designate individual pricing officers who are accountable for all pricing activities and chief underwriters who are accountable for the underwriting activities. Along with the pricing officer, the general manager and chief financial officer of each business unit approves the design and pricing of each product, including key claims, policyholder behaviour, investment return and expense assumptions, in accordance with corporate policies and standards. Through oversight and review, divisional risk officers and CRM provide approval of all product and pricing initiatives, as well as reinsurance treaties related to new business. In addition, Corporate Actuarial approves all policy liability valuation methods, assumptions and in-force reinsurance treaties. We perform annual risk and compliance self-assessments of the product development, pricing, underwriting and claims activities of all businesses. We also facilitate knowledge transfer between staff working with similar businesses in different geographies in order to leverage best practices.

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 retention limit is US$30 million for a single life (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 internationally and insuring a wide range of unrelated risk events.

The Company's aggregate exposure to each of policyholder behaviour risk and claims risk are managed against enterprise-wide economic capital and earnings at risk targets. The policyholder behaviour risk targets cover the combined risk arising from policyholder policy lapses and surrenders, withdrawals and other policyholder driven activity. The claims risk targets 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.

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 would increase accordingly.

### Operational Risk

***Operational risk is the risk of loss resulting from inadequate or failed internal processes, risk management policies and procedures, systems failures, human performance failures or from external events.***

#### Key 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, processing errors, modeling 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 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.

#### Risk Management Strategy

Our corporate governance practices, corporate values, and integrated, enterprise-wide approach to managing risk set the foundation for mitigating operational risks. We strengthen this base by establishing appropriate internal controls and systems, compensation programs, and by seeking to 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 establish enterprise-wide risk management programs for specific operational risks that could materially impact our ability to do business or impact our reputation. Within established corporate standards, business unit general managers are accountable for the day-to-day management of the operational risks inherent in their operations.

Through our corporate insurance program, we transfer a portion of our operational risk exposure by purchasing global and local insurance coverage that provides some protection against unexpected material losses resulting from events such as criminal activity, property loss or damage and liability exposures. We also purchase certain insurance to satisfy legal requirements and/or contractual obligations. We determine the nature and amount of insurance coverage we purchase centrally, considering our enterprise-wide exposures and risk tolerances.

The following is a further description of key operational risk factors with associated management strategies.

**Legal and Regulatory Risk**
In addition to the regulatory and capital requirements described under Strategic Risk, the Company is subject to extensive regulatory oversight by insurance and financial services regulators in the jurisdictions in which we conduct business. While many of these laws and regulations 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. We are also regularly involved in litigation, both as a plaintiff or defendant, which could result in an unfavourable resolution.

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 helps to ensure significant issues are 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” and “Legal Proceedings” in our most recent Annual Information Form.

**Technology, Information Security and Business Continuity Risks**
Technology is used in virtually all aspects of our business and operations including the creation and support of new products and services. Our technology infrastructure, information services and applications are governed and managed according to operational integrity, resiliency, data integrity, confidentiality and information security policies, standards and controls. Disruption to Information Services operations due to system failure, security breach or global crisis can have negative consequences for our businesses. We have business continuity and disaster recovery, information security, technology risk and other policies, plans and procedures in place designed to minimize the impact of business disruptions, help ensure compliance with laws and regulations and protect confidential/personal information. However, disruptions, breaches or violations caused by errors, natural disasters, man-made disasters, criminal activity, fraud, pandemics or other events beyond our control, could prevent us from effectively operating our business, or could adversely impact us from a financial, operational and reputational perspective. In particular, our computer networks are subject to the risk of Advanced Persistent Threats (APT), also referred to as cyber attacks. APT is a type of sophisticated malware breach that has become more pervasive and frequent with the financial services sector. An APT is a network attack in which an unauthorized person attempts to gain undetected access to a network. 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.

Technology risk management, information security and business continuity risks are managed through a governance and oversight process as part of our Global Information Risk Management program, which includes information and cyber security defenses, to protect our networks from APT and other cyber attacks. The Global Information Risk Management team maintains and updates policies along with standards of practice designed to ensure to the extent practical, key business functions can continue normal operations effectively and efficiently, in the event of a major disruption. Each business unit is accountable for preparing and maintaining its own detailed business continuity plans and processes and 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. The divisions maintain off-site backup facilities and failover capability designed to minimize downtime and accelerate system recovery. As part of our standard vendor management process we subject our outsourcing arrangements, whereby a service provider performs a service activity on behalf of the Company, to standard review procedures, prior to their approval. We have policies and procedures in place to monitor the ongoing results and contractual compliance of such third party arrangements.

**Human Resource Risks**
We compete with other insurance companies and financial institutions for qualified executives, employees and agents. 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 have established and implemented a number of human resource policies, practices and programs in order to manage these risks, including recruiting programs at every level of the organization, training and development programs, and competitive compensation programs that are designed to attract, motivate and retain high-performing employees.

**Model Risk**
Our reliance on highly complex models for pricing, valuation and risk measurement, and for input to decision making, is increasing. Consequently, the risk of inappropriate use or interpretation of our models or their output, or the use of deficient models, data or assumptions is growing. Our model risk oversight program includes processes intended to ensure that our critical business models are conceptually sound, used as intended, and to assess the appropriateness of the calculations and outputs.

**Environmental Risk**
Our Environmental 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. Environmental Procedures have been designed to manage environmental risk and to achieve compliance with all applicable environmental laws and regulations for business units, affiliates and subsidiaries. Environmental risk may originate from investment properties that are subject to natural or man-made environmental risk. 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. Real estate assets may be owned, leased and/or managed, as well as mortgaged by Manulife who might enter into the chain of liability due to foreclosure ownership when in default. 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. To mitigate environmental risk, business units have established protocols and due diligence standards to identify environmental issues in advance of acquisition. 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 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.

**Additional Risk Factors That May Affect Future Results**
The Accounting Standards Board of the CICA makes changes to the financial accounting and reporting standards that govern the preparation of our financial statements. These changes may be difficult to anticipate and may materially impact how we record and present our financial condition and results of operations. As discussed under "Critical Accounting and Actuarial Policies", the preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts and disclosures made in the financial statements and accompanying notes. These estimates and assumptions may require revision and actual results may differ materially from these estimates. As well, as noted under "Cautionary Statement Concerning Forward-Looking Statements", forward-looking statements involve risks and uncertainties and actual results may differ materially from those expressed or implied in such statements. Key risk factors and their management have been described above, summarized by major risk category.

Other factors that may affect future results include changes in government trade policy; monetary policy; fiscal policy; political conditions and developments in or affecting the countries in which we operate; technological changes; public infrastructure disruptions; climate change; 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.

# Capital Management Framework

Manulife seeks to manage its capital with the objectives of:

- Safeguarding commitments made to policyholders and customers;
- Prudently and effectively deploying the capital invested in the Company;
- Protecting or enhancing the Company's reputation and brand; and
- Maintaining target financial strength ratings.

Capital is managed and monitored in accordance with the Capital Management Policy, which is reviewed and approved by the Board of Directors annually. The policy is integrated with the Company's risk and financial frameworks. It establishes guidelines regarding the quantity and quality of capital, internal capital mobility, and proactive management of ongoing and future capital requirements. The Board or its designated committees regularly review the Company's capital position and capital plans. Operational oversight of capital management across the enterprise is provided by the Capital Committee, consisting of senior finance and risk management executives and chaired by the Chief Actuary.

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. Our capital adequacy assessment considers expectations of key external stakeholders such as regulators and rating agencies, results of sensitivity testing as well as a comparison to our peers. We set our internal capital targets above regulatory requirements, monitor against these internal targets and initiate actions appropriate to achieving our business objectives.

We also 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 2012 DCAT results demonstrate that we have sufficient assets to discharge policy liabilities in the various adverse scenarios tested.

We integrate capital management into our product planning and performance management. Capital is generally allocated to business lines based on the higher of the internal risk-based capital and the regulatory capital levels applicable to each jurisdiction.

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 rise (fall) when the Canadian dollar weakens (strengthens).

The composition of capital between equity and other capital instruments impacts the Company's financial strength ratings and therefore is an important consideration in determining the appropriate amount of leverage. The Company monitors and rebalances its capital mix through capital issuances and redemptions.

### MFC Consolidated Capital

The following measure of capital serves as the foundation of our capital management activities at the MFC level.

| As at December 31, (C$ millions) | 2012 | 2011 | 2010 |
|---|---|---|---|
| Non-controlling interest in subsidiaries | **$ 501** | $ 415 | $ 410 |
| Participating policyholders' equity | **146** | 249 | 160 |
| Preferred shares | **2,497** | 1,813 | 1,422 |
| Common shareholders' equity | **22,952** | 22,402 | 22,683 |
| Total equity[1] | **$ 26,096** | $ 24,879 | $ 24,675 |
| Less accumulated other comprehensive loss on cash flow hedges | **(50)** | (91) | (55) |
| Total equity less accumulated other comprehensive loss on cash flow hedges | **$ 26,146** | $ 24,970 | $ 24,730 |
| Liabilities for preferred shares and qualifying capital instruments | **3,501** | 4,012 | 4,004 |
| **Total capital** | **$ 29,647** | $ 28,982 | $ 28,734 |

(1) Total equity includes unrealized gains and losses on AFS bonds and AFS equities, net of taxes. The unrealized gain or loss on AFS bonds are excluded from the OSFI definition of regulatory capital. As at December 31, 2012, the gain on AFS bonds, net of taxes, was $312 (2011 – $193).

At December 31, 2012, the Company's capital increased by $0.6 billion compared to December 31, 2011. The increases included net earnings of $1.7 billion and net capital raised of $0.2 billion, partially offset by $0.7 billion impact of the stronger Canadian dollar and cash dividends in 2012 of $0.7 billion.

The "Total capital" above does not include $5.5 billion (2011 – $5.5 billion, 2010 – $5.8 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 the form that qualifies as regulatory capital at the subsidiary level. Rating agencies expect companies to limit this and other sources of financial leverage to levels appropriate for their ratings.

### Capital and Funding Activities

During 2012 we raised $1,200 million of capital and redeemed $1,000 million through the following transactions:

- We issued $500 million of MLI (4.165%) subordinated debentures on February 17, 2012.

- We issued a total of $700 million of preferred shares during the year: $250 million (4.60%) on February 22, 2012, $250 million (4.40%) on May 24, 2012 and $200 million (4.00%) on December 4, 2012.
- We redeemed a total of $1,000 million of capital notes issued by Manulife Financial Capital Trust, qualifying as regulatory Innovative Tier 1 capital, on June 30, 2012, comprising $60 million of Series A Units (7.00%) and $940 million of Series B Units (6.70%).

In 2013, $350 million of MFC's senior indebtedness (4.67%) matures on March 28, 2013.

**Common Shareholder Dividends and Dividend Payout Ratio**

The declaration and payment of shareholder dividends and the amount thereof are at the discretion of the Board and depend upon the results of operations, financial conditions, cash requirements and future prospects of the Company, taking into account regulatory restrictions on the payment of shareholder dividends as well as other factors deemed relevant by the Board.

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's discretion. Participation in the DRIP is strong, with enrolment of approximately one-third of shares outstanding. In 2012 we issued 26 million common shares (2011 – 23 million) for a total consideration of $318 million (2011 – $298 million) under this program.

**Regulatory Capital Position[14]**

The Company monitors and manages consolidated capital for MFC in compliance with the OSFI Guideline A2 – Capital Regime for Regulated Insurance Holding Companies and Non-Operating Life Companies. Under this regime our consolidated available capital is measured against a required amount of risk capital determined in accordance with the guideline. The capital position of consolidated MFC operations remains in excess of our internal targets.

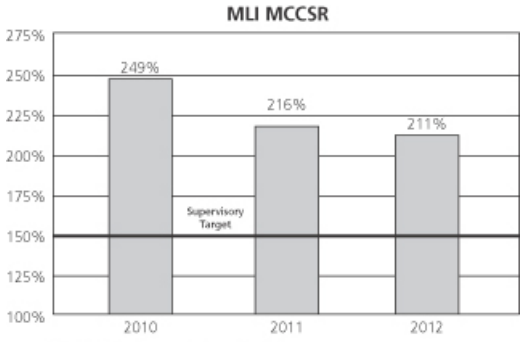
MFC's operating activities are mostly conducted within MLI or its subsidiaries. MLI is regulated by OSFI and is subject to consolidated risk based capital requirements using the OSFI MCCSR framework. Some affiliate reinsurance business is undertaken outside the MLI consolidated framework.

Our MCCSR ratio for MLI ended the year at 211 per cent. In addition to earnings and capital funding activities, regulatory capital requirements were supported by reinsurance transactions executed in 2012. These external reinsurance transactions related to the U.S. fixed deferred annuity businesses as well as Japan Universal Life business and jointly improved the year end MCCSR position by approximately six points.

We consider MLI's MCCSR ratio strong in view of our materially reduced risk sensitivities, the fact that we have capitalized most of the unfavourable impact of the current low interest rate environment and the lack of explicit capital credit for the hedging of our variable annuity liabilities. We have achieved our equity market and interest rate risk targets two years ahead of schedule.

The 2013 MCCSR Guideline contains two changes that will each significantly impact MLI's regulatory capital ratio. Using recent data and analysis, OSFI reduced requirements for lapse risk capital. As a result, MLI's MCCSR ratio would increase by approximately four points on a pro forma basis as of January 1, 2013. OSFI also aligned the capital rules with the new accounting standard for defined benefits pension plans (IAS 19R). The initial reduction in available capital resulting from unrealized losses on the Company's own pension plans will be amortized for regulatory capital purposes on a straight line basis to December 31, 2014, for a total of approximately five points reduction in the ratio by the end of 2014. Future unrealized gains and losses recorded under this standard will be amortized into regulatory capital over twelve quarters, thus mitigating potential volatility of the new rules.

MLI's non-consolidated operations and subsidiaries all maintained capital levels in excess of local requirements as at December 31, 2012 . In particular, Manulife Canada Ltd., an OSFI regulated Canadian operating insurance company, had an MCCSR ratio of 232 per cent, above the regulator's supervisory target of 150 per cent.



Actual MLI ratios as at December 31.
OSFI regulatory minimum is 120%, with 150% supervisory target.

[14] The risk management section of the MD&A outlines a number of regulatory capital risks.

# Credit Ratings

Manulife Financial's insurance operating companies have strong ratings from the credit rating agencies for financial strength and claims paying ability. Maintaining strong ratings on debt and capital instruments issued by MFC and its subsidiaries allows us to access the capital markets at competitive pricing levels. Should these credit ratings decrease materially, our cost of financing may increase and our access to funding and capital through the capital markets could be reduced.

During 2012, S&P, Moody's, Fitch, DBRS and A.M. Best maintained their assigned ratings. At December 31, 2012, S&P, Moody's, DBRS and A.M. Best had a stable outlook on the ratings of our insurance operating companies and Fitch had a negative outlook. In February 2013, Fitch affirmed the financial strength ratings of our insurance operating companies and credit ratings and maintained the negative outlook.

The following table summarizes the financial strength and claims paying ability ratings of MLI and certain of its subsidiaries as at March 12, 2013.

**Financial Strength/Claims Paying Ability Ratings**

| | S&P | Moody's | DBRS | Fitch | A.M. Best |
|---|---|---|---|---|---|
| The Manufacturers Life Insurance Company | **AA-** | **A1** | **IC-1** | **AA-** | **A+** |
| John Hancock Life Insurance Company (U.S.A.) | **AA-** | **A1** | **Not Rated** | **AA-** | **A+** |
| Manulife (International) Limited | **AA-** | **Not Rated** | **Not Rated** | **Not Rated** | **Not Rated** |
| Manulife Life Insurance Company (Japan) | **AA-** | **Not Rated** | **Not Rated** | **Not Rated** | **Not Rated** |

# 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, 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 and valuation of goodwill and intangible assets 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**
Policy liabilities for IFRS are valued under standards established by the Canadian Institute of Actuaries. These standards are designed to ensure we establish an appropriate liability on the balance sheet to cover future obligations to all our policyholders. Under IFRS, 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, operating expenses, certain taxes (other than income taxes) 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 Canadian Institute of Actuaries 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 historic 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. Actual mortality experience is monitored against these assumptions separately for each business. Where mortality rates are lower than assumed for life insurance the result is favourable, and where mortality rates are higher than assumed for payout annuities, mortality results are favourable. Overall 2012 experience was favourable when compared with our assumptions. Changes to future expected mortality assumptions in the policy liabilities in 2012 resulted in a reduction in policy liabilities.

**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 Long-Term Care business we make assumptions about future morbidity improvements. 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 2012 experience was unfavourable when compared with our assumptions.

**Property and Casualty**
Our Property and Casualty Reinsurance business insures against losses from natural and human disasters and accidental events. Policy liabilities are held for incurred claims not yet reported, for claims reported but not yet paid and for expected future claims related to premiums paid to date. In 2011, we had significant adverse experience on business assumed on our retrocession business related to the earthquakes in Japan and New Zealand. Our 2012 claims loss experience was favourable 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 2012 experience was unfavourable when compared to our assumptions. Revisions were made to future expected policyholder behaviour assumptions for Guaranteed Minimum Withdrawal products associated with segregated funds and for certain insurance businesses in the U.S. and Japan in 2012 to reflect the emerging experience, resulting in significant increases in policy 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 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 2012 were 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 re-investment 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 2012, actual investment returns were unfavourable when compared to our assumptions. Overall investment results, excluding returns on variable annuities, were favourable. While the decline in interest rates was adverse in the year, this unfavourable experience was more than offset by gains from asset trading and origination activity.

**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 most dominant assumption is the return on the underlying funds in which the policyholders invest. This risk is mitigated through a dynamic hedging strategy. In 2012, experience on assets underlying segregated fund business which has guarantees due to changes in market value of funds under management was favourable for both the business that is hedged and the business that is not hedged. Note that an unchanged market or an increase of less than our expected returns will still result in an earnings loss, since actual returns would not meet the expected returns in the valuation models.

**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.

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,** (C$ millions) | **2012** | 2011 |
|---|---|---|
| **Best estimate actuarial liability**[1] | **$ 135,822** | $ 134,514 |
| **Provision for adverse deviation** | | |
| Insurance risks (mortality/morbidity) | **$ 10,181** | $ 9,008 |
| Policyholder behavior (lapse/surrender/premium persistency) | **3,216** | 3,074 |
| Expenses | **1,940** | 1,747 |
| Investment risks (non-credit) | **18,343** | 18,634 |
| Investment risks (credit) | **1,294** | 1,394 |
| Segregated fund guarantees | **4,442** | 5,240 |
| Other | **10** | 18 |
| **Total provision for adverse deviation (PfAD)**[1] | **$ 39,426** | $ 39,115 |
| **Segregated funds – additional margins** | **8,571** | 8,686 |
| **Total of PfAD and additional segregated fund margins** | **$ 47,997** | $ 47,801 |

(1) Reported actuarial liabilities as at December 31, 2012 of $175,248 (2011 – $173,629) are composed of $135,822 (2011 – $134,514) of best estimate actuarial liability and $39,426 (2011 – $39,115) of PfAD.

The change in PfAD from period to period is impacted by changes in liability and asset composition, by movements in currency and movements in interest rates and by material changes in valuation assumptions. The overall increase in PfADs for insurance risks and policyholder behavior was driven by the decline in interest rates during the year resulting in a reduction in the discount rates used to value the PfADs. The decline in segregated fund guarantee PfADs was due to improved equity markets over the year.

### 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 income. The sensitivity of after-tax income 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.

Most participating business is excluded from this analysis because of the ability to pass both favourable and adverse experience to the policyholders through the participating dividend adjustment.

### Sensitivity of Insurance Contract Liabilities to Changes in Non-economic Assumptions

| **For the years ended December 31,** (C$ millions) | Decrease in after-tax income **2012** | 2011 |
|---|---|---|
| **Policy Related Assumptions** | | |
| 2% adverse change in future mortality rates [1],[3] | | |
| Products where an increase in rates increases policy liabilities | **$ (200)** | $ (200) |
| Products where a decrease in rates increases policy liabilities | **(300)** | (300) |
| 5% increase in future morbidity rates [2],[3] | **(1,400)** | (1,200) |
| 10% adverse change in future termination rates [3] | **(1,400)** | (1,200) |
| 5% increase in future expense levels | **(400)** | (300) |

(1) 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.

(2) 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.

(3) 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.

We have updated our disclosure to show the estimated impact on net income attributed to shareholders for the next five years and the following five years from changes in fixed income ultimate reinvestment rates (URR) driven by changes in risk free rates.

The table below shows the potential impact on annual net income attributed to shareholders where the URR is determined assuming that risk free rates remain at their starting December 31, 2012 levels. It also shows the potential impact if the URR were determined using risk free rates that are assumed to immediately rise or immediately fall by 50 basis points and then stay at these new levels. We also provide pro-forma estimates as at December 31, 2011 developed using our previously disclosed URR sensitivities. For these pro-forma estimates we assume that assets, liabilities and the interest rate environment are those which were used to value policy liabilities at that time.

Canadian actuarial standards of practice require that policy liabilities be at least as great as the largest value produced by a set of prescribed reinvestment scenarios. The impacts below assume that the URR changes implied by these shocks do not change which reinvestment scenario produces the largest reserve.

**Potential impact on aggregate next five years and the following five years net income attributed to shareholders arising from potential changes to the fixed income ultimate reinvestment rates (URR)**[1]

| **As at December 31,** (C$ millions) | **2012** | | 2011 | |
|---|---|---|---|---|
| For the periods | **2013 – 2017** | **2018 – 2022** | 2012 – 2016 | 2017 – 2021 |
| Risk free rates remain at December 31, 2012 and December 31, 2011 levels, respectively. | **$ (1,600)** | **$ (300)** | $ (2,100) | $ (500) |
| Risk free rates rise 50 bp immediately from their December 31, 2012 or December 31, 2011, levels respectively, and then remain at those new levels thereafter. | **$ (900)** | **$ –** | $ (1,300) | $ (200) |
| Risk free rates fall 50 bp immediately from their December 31, 2012 or December 31, 2011 levels, respectively, and then remain at those new levels thereafter. | **$ (2,200)** | **$ (500)** | $ (2,700) | $ (700) |

[1] Current URRs in Canada are 1.00% per annum and 3.00% per annum for short and long-term bonds, respectively, and in the U.S. are 0.80% per annum and 3.60% per annum for short and long-term bonds, respectively. The URRs are based upon a five and ten year rolling average of government bond rates and the URR valuation assumptions are currently higher than the December 31, 2012 government bond rates.

**Potential impact on net income attributed to shareholders arising from changes to asset related assumptions supporting actuarial liabilities, excluding the fixed income ultimate reinvestment rate discussed above**

| | Increase (decrease) in after-tax income | | | |
|---|---|---|---|---|
| | **2012** | | 2011 | |
| **As at December 31,** (C$ millions) | Increase | Decrease | Increase | Decrease |
| **Asset related assumptions updated periodically in valuation basis changes** | | | | |
| 100 basis point change in future annual returns for publicly traded equities [1] | **$ 800** | **$ (900)** | $ 900 | $ (900) |
| 100 basis point change in future annual returns for alternative long-duration assets [2] | **3,900** | **(4,000)** | 4,200 | (3,800) |
| 100 basis point change in equity volatility assumption for stochastic segregated fund modeling [3] | **(300)** | **300** | (300) | 300 |

[1] Expected long-term annual market growth assumptions for public equities pre-dividends for key markets are based on long-term historical observed experience and are 7.6% per annum in Canada, 7.6% per annum in the U.S. and 5.3% per annum in Japan. Growth assumptions for European equity funds are market-specific and vary between 5.8% and 7.85%. These returns are then reduced by margins for adverse deviation to determine net yields used in the valuation. The amount 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 $500 million (2011 – $700 million). For a 100 basis point decrease in expected growth rates, the impact from segregated fund guarantee reserves is $(600) million (2011 – $(700) million).

[2] Alternative long-duration assets include commercial real estate, timber and agricultural real estate, oil and gas, and private equities. The assumed returns on alternative long-duration assets net of provisions for adverse deviation and after taking into account the impact of differential taxation, have a similar impact on policyholder liabilities as the assumptions for public equities. The increased sensitivity from December 31, 2011 to December 31, 2012 is primarily related to the decline in fixed income rates over the year (reducing the rate at which funds can reinvest in) as well as the change in foreign exchange rates in the year.

[3] Volatility assumptions for public equities are based on long-term historic observed experience and compliance with actuarial standards. The resulting volatility assumptions are 17.15% 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 16.15% and 18.35%.

The sensitivity to changes in public equity returns remains unchanged from 2011. Market returns in 2012 were below the expected returns assumed in the valuation which increased sensitivity, but this was offset by the increased amounts of dynamic hedges that were put in place in 2012. The increase in sensitivity to a 100 basis point change in returns for other alternative long-duration assets is primarily related to the decline in fixed income rates over the year, which reduces the rate at which we can reinvest, as well as the change in foreign exchange rates over the year.

**Review of Actuarial Methods and Assumptions**

The 2012 full year review of the actuarial methods and assumptions underlying policy liabilities produced an increase in the policy liabilities of $2,686 million net of reinsurance ceded, and includes $214 million attributed to participating policyholders. Net of the

impacts on participating policyholder surplus and minority interests, this resulted in a decrease in net income attributed to shareholders of $1,757 million post-tax including $677 million related to updates to the URR.

In conjunction with prudent best practices to manage both product and asset related risks, the selection and monitoring of assumptions appropriate to the business is designed to minimize our exposure to measurement uncertainty related to policy liabilities. 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.

The following table summarizes the full year 2012 impact of changes in actuarial methods and assumptions, other than changes to the fixed income URR, on policy liabilities and net income attributed to shareholders by the three main drivers.

**For the year ended December 31, 2012**
(C$ millions)

| Assumption | To Policy Liabilities | To Net Income Attributed to Shareholders |
|---|---|---|
| **Related to the URR** | **$ 983** | **$ (677)** |
| **Related to updates to actuarial standards** | | |
| Segregated fund equity calibration | **$ 317** | **$ (244)** |
| **Largely related to current macro-economic environment** | | |
| USVA GMWB update for withdrawal and lapse assumptions | **$ 722** | **$ (469)** |
| Stochastic bond parameter update | **595** | **(427)** |
| Life insurance lapse updates | **296** | **(194)** |
| Other interest rate related impacts | **258** | **(30)** |
| | **$ 1,871** | **$ (1,120)** |
| **Other annual updates** | | |
| Mortality and morbidity updates | **$ (196)** | **$ 166** |
| Expense updates | **(206)** | **142** |
| Other lapse updates | **144** | **(134)** |
| Alternative asset modeling refinements and assumption updates | **215** | **(178)** |
| Refinement to corporate spread modeling | **(249)** | **167** |
| Update to VA hedge business margin | **(179)** | **126** |
| Other | **(14)** | **(6)** |
| | **$ (485)** | **$ 283** |
| **Net impact excluding changes in URR** | **$ 1,703** | **$ (1,081)** |

### Related to updates to actuarial standards

Actuarial standards related to equity calibration for stochastic models used to value segregated fund liabilities were updated in 2012. The implementation of those changes resulted in a $244 million charge to earnings.

### Related to changes in the macro-economic environment

Withdrawal and utilization assumptions were strengthened for U.S. Variable Annuity Guaranteed Minimum Withdrawal Benefit business to reflect emerging experience where previously there was limited to no experience. This resulted in a charge to earnings of $469 million.

The low interest rate environment has resulted in an update to the bond parameters used in the stochastic valuation of our segregated fund business. Mean returns generally declined, while volatility parameters were largely unchanged. This resulted in a $427 million charge to earnings.

Lapse rates for certain U.S. Universal Life products with interest guarantees and for certain Japan term insurance businesses were updated to reflect reduced policyholder lapse experience, resulting in a $194 million charge to earnings.

Interest rates were updated for certain participating business in Canada, resulting in a charge to shareholder earnings of $30 million based on our estimate of the amount of future benefits that may have to be covered by the shareholder account.

### Other annual updates

Updates to other liability related assumptions were the result of the annual review or monitoring of assumptions and resulted in a $283 million favourable impact to income. Mortality gains of $166 million included gains for updates to morbidity assumptions in Japan and refinement of mortality assumptions in certain U.S. life insurance segments, offset by charges for strengthening of mortality assumptions for Canadian annuity and segregated fund businesses. A charge of $134 million was the result of updates to lapse assumptions for Japan and Canadian insurance products.

Updates to expenses resulted in a $142 million favourable income impact, and were the result of favourable investment expenses partly offset by an update to letter of credit costs in the U.S.

Various refinements to the modeling of alternate asset cash flows and offset by updates to return assumptions resulted in a charge to shareholder income of $178 million.

A $167 million favourable income impact resulted from refinements to the modeling of corporate spreads.

A reduction in valuation margins for segregated fund business that is dynamically hedged resulted in a $126 million benefit to shareholders' earnings.

A $6 million net reduction in shareholders' earnings related to refinements in policyholder cash flows included a charge for the provisioning of the anticipated future earnings impact from valuation systems conversions, largely offset by the realized benefits from modeling of future tax timing differences.

**Change in Insurance Contract Liabilities**

The change in insurance contract liabilities can be attributed to several sources: new business, acquisitions, in-force movement and currency impact. Changes in 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 insurance contract liabilities by business segment are shown below:

**2012 Insurance Contract Liability Movement Analysis**

| (C$ millions) | Asia Division | Canadian Division | U.S. Division | Corporate and Other | Total |
|---|---|---|---|---|---|
| Balance, January 1, 2012 | **$ 26,733** | **$ 47,144** | **$ 105,431** | **$ 330** | **$ 179,638** |
| New business | **$ 751** | **$ 67** | **$ 1,732** | **$ –** | **$ 2,550** |
| In-force movement | **3,035** | **2,244** | **(4,902)** | **(510)** | **(133)** |
| Changes in methods & assumptions | **147** | **1,155** | **1,367** | **17** | **2,686** |
| Currency impact | **(1,502)** | **(1)** | **(2,328)** | **(3)** | **(3,834)** |
| Total net changes | **$ 2,431** | **$ 3,465** | **$ (4,131)** | **$ (496)** | **$ 1,269** |
| **Balance, December 31, 2012** | **$ 29,164** | **$ 50,609** | **$ 101,300** | **$ (166)** | **$ 180,907** |

For new business, the segments with large positive general account premium revenue at contract inception show increases in policy liabilities. For segments where new business deposits are primarily into segregated funds, the increase in policy liabilities related to new business is small since the increase measures only general account liabilities. New business policy liability impact is negative when estimated future premiums, together with future investment income, are expected to be more than sufficient to pay estimated future benefits, policyholder dividends and refunds, taxes (excluding income taxes) and expenses on new policies issued.

The net in-force movement over the year was a decrease of $133 million. A material part of the in-force movement increase was related to the decline in interest rates and the resulting impact on the fair value of assets which back those policy liabilities. The $4.9 billion in-force reserve decrease in the U.S. Division during 2012 included a $6.9 billion decrease from reinsurance ceded arrangements entered into during the year. The decrease in the Corporate and Other segment was related to the settlement of claims in the Accident and Health Reinsurance operation that is closed to new business, and the Property and Casualty Reinsurance business.

The increase of $2,686 million from changes in methods and assumptions resulted in a decrease in pre-tax earnings.

Of the $2,417 million net increase in insurance contract liabilities related to new business and in-force movement, $2,647 million was an increase in actuarial liabilities. The remaining was a decrease of $230 million in other insurance contract liabilities.

The decrease in policy liabilities from currency reflects the appreciation of the Canadian dollar relative to the U.S. dollar as well as Japanese yen. To the extent assets are currency matched to liabilities, the decrease in insurance contract liabilities due to currency is offset by a corresponding decrease from currency in the value of assets supporting those liabilities.

**2011 Insurance Contract Liability Movement Analysis**

| (C$ millions) | Asia Division | Canadian Division | U.S. Division | Corporate and Other | Total |
|---|---|---|---|---|---|
| Balance, January 1, 2011 | $ 21,379 | $ 42,317 | $ 85,569 | $ 1,215 | $ 150,480 |
| New business | $ 273 | $ 444 | $ 1,635 | $ (2) | $ 2,350 |
| In-force movement | 4,135 | 4,029 | 14,570 | (917) | 21,817 |
| Changes in methods & assumptions | 77 | 352 | 1,107 | 12 | 1,548 |
| Currency impact | 869 | 2 | 2,550 | 22 | 3,443 |
| Total net changes | $ 5,354 | $ 4,827 | $ 19,862 | $ (885) | $ 29,158 |
| Balance, December 31, 2011 | $ 26,733 | $ 47,144 | $ 105,431 | $ 330 | $ 179,638 |

For new business, the segments with large positive general account premium revenue at contract inception show large increases in policy liabilities. For segments where new business deposits are primarily into segregated funds, the increase in policy liabilities related to new business is small since the increase measures only general account liabilities. New business policy liability impact is negative when estimated future premiums, together with future investment income, are expected to be more than sufficient to pay estimated future benefits, policyholder dividends and refunds, taxes (excluding income taxes) and expenses on new policies issued.

The in-force movement over the year was an increase of $21,817 million. A material part of the in-force movement increase was related to the decline in interest rates and the resulting impact on the fair value of assets which back those liabilities. The decrease in the Corporate and Other segment was related to the sale of the Reinsurance Life Retrocession business and John Hancock Accident and Health operation that is closed to new business and running off.

Of the $24,167 million net increase in insurance contract liabilities related to new business and in-force movement, $23,634 million was an increase in actuarial liabilities. The remaining was an increase of $533 million in other insurance contract liabilities.

The increase in policy liabilities from currency reflects the depreciation of the Canadian dollar relative to the U.S. dollar as well as Japanese yen. To the extent assets are currency matched to liabilities, the increase in insurance contract liabilities due to currency is offset by a corresponding increase from currency in the value of assets supporting those liabilities.

**Consolidation**

Consolidation is required for those entities in which the Company, directly or indirectly, has power to exercise control over financial and operating policies in order to gain economic benefits. The existence and effect of potential voting rights that are currently exercisable or convertible are considered in assessing whether the Company controls another entity. Special Purpose Entities ("SPEs") are consolidated when the substance of the relationship between the Company and that entity indicates control.

Potential indicators of control include an assessment of the Company's exposure to the risks and benefits of the SPE. This assessment of risks and benefits is based on arrangements in place and the assessed risk exposures at inception. The initial assessment is reconsidered at a later date if:

a) the Company acquires additional interests in the entity;
b) the contractual arrangements of the entity are amended such that the relative exposure to risks and benefits change; or
c) the Company acquires control over the main operating and financial decisions of the entity.

Subsidiaries are consolidated from the date on which control is transferred to 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 2012 Consolidated Financial Statements for a description of the methods used in determining fair value for applicable invested assets. 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 or other similar techniques. The inputs to these market standard valuation methodologies include, but are not limited to: 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 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 securities, or the price ultimately realized for these securities, depends upon the demand and liquidity in the market and increases the use of judgment in determining the estimated fair value of certain securities.

**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 income. Impaired securities are reviewed on a regular basis and any fair value decrement is transferred out of Accumulated Other Comprehensive Income ("AOCI") and recorded in income 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 Consolidated Financial Statements.

**Derivative Financial Instruments**

The Company uses derivative financial instruments ("derivatives") to manage exposures to foreign currency, interest rate, equity and other market risks arising from on-balance sheet financial instruments, selected anticipated transactions and certain guarantee related actuarial liabilities. Refer to note 5 to the 2012 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. If it was determined that hedge accounting designations were not appropriately applied, reported net income could be materially affected. 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 and different interpretations or estimates may have a material effect on the amount reported in net income.

**Employee Future Benefits**

The Company maintains a number of plans providing pension (defined benefit and defined contribution) and other post-employment benefits to eligible employees and agents after employment. The largest of these are the defined benefit pension and retiree welfare plans in the U.S. and Canada that are the material plans discussed herein and that are the subject of the disclosures in note 17 to the 2012 Consolidated Financial Statements.

Due to the long-term nature of defined benefit pension and retiree welfare plans, the calculation of the defined benefit obligations and net benefit cost depends on various economic assumptions such as discount rates, expected rates of return on plan assets, health care cost trend rates and compensation increase rates. These assumptions are determined by management and are reviewed annually. Differences between actual and expected experience give rise to actuarial gains and losses that affect the amount of the defined benefit obligations and net benefit cost. The weighted average assumptions used, as well as the sensitivity of the obligations and net benefit cost to these assumptions, are presented in note 17 to the 2012 Consolidated Financial Statements.

During 2012, the actual experience for the material plans resulted in an actuarial loss of $2 million (2011 – $209 million) for the defined benefit pension plans and an actuarial gain of $72 million (2011 – loss of $34 million) for the retiree welfare plans. As at December 31, 2012, the actuarial gains and losses that had not yet been recognized in income amounted to a net unrecognized actuarial loss of $825 million (2011 – $990 million) for the defined benefit pension plans and a net unrecognized actuarial gain of $23 million (2011 – loss of $49 million) for the retiree welfare plans.

Contributions to the material broad based defined benefit pension plans are made in accordance with the regulations in the countries in which the plans are offered. During 2012, the Company contributed $37 million (2011 – $23 million) to these plans. As at December 31, 2012, the shortfall between plan assets and plan obligations was $95 million (2011 – $193 million). For 2013, the funding required for these broad-based defined benefit pension plans is expected to be approximately $21 million. The Company's material supplemental pension plans for executives are unfunded; benefits under these plans are funded as they become due. During 2012, the Company made benefit payments of $62 million (2011 – $57 million) under these plans. As at December 31, 2012, the defined benefit obligations amounted to $727 million (2011 – $720 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, 2012, the shortfall between plan assets and plan obligations was $221 million (2011 – $322 million).

For further details on the obligations and net benefit cost for the Company's material defined benefit pension and retiree welfare plans, refer to note 17 to the 2012 Consolidated Financial Statements.

**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 income tax asset or liability is recognized whenever an amount is recorded for accounting purposes but not for tax purposes or vice versa. 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. Valuation allowances are established when management determines, based on available information, that it is more likely than not that deferred income tax assets will not be realized. Factors in management's determination consider the performance of the business including the ability to generate capital gains. Significant judgment is required in determining whether valuation allowances should be established, as well as the amount of such allowances. When making such determinations, consideration is given to, among other things, the following:

a) future taxable income exclusive of reversing temporary differences and carry forwards;
b) future reversals of existing taxable temporary differences;
c) taxable income in prior carryback years; and
d) 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 valuation allowances on deferred tax assets significantly change, or when receipt of new information indicates the need for adjustment in valuation allowances. 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 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.

The Company is an investor in a number of leasing transactions and has established provisions for possible disallowance of the tax treatment and for interest on past due taxes. The Company continues to believe that deductions originally claimed in relation to these arrangements are appropriate. Should the tax attributes of all our lease transactions be fully denied, no material impact to the Company's results is expected.

**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. As a result of the current economic environment including the persistent low interest rates in 2012, the Company recorded a goodwill impairment charge of $200 million attributable to our Canadian Individual Life CGU. This non-cash charge recorded in our Corporate and Other segment does not affect our ongoing operations or our regulatory capital ratios. The Company completed its 2012 goodwill and intangible assets tests in the fourth quarter of 2012, and as a result, management concluded that there was no further impairment of goodwill or intangible assets with indefinite lives.

Impairment charges could occur in the future as a result of changes in economic conditions. The goodwill testing for 2013 will be updated based on the conditions that exist in 2013 and may result in further impairment charges, which could be material.

**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 2013 and subsequently. Summaries of each of the most recently issued key accounting standards are presented below:

**(a) IFRS 10 "Consolidated Financial Statements"**
**IFRS 11 "Joint Arrangements"**
**IFRS 12 "Disclosure of Interests in Other Entities"**
**IAS 27 "Separate Financial Statements" (as amended)**
**IAS 28 "Investments in Associates and Joint Ventures" (as amended)**
**"Investment Entities" (Amendments to IFRS 10, IFRS 12 and IAS 27)**

IFRS 10 "Consolidated Financial Statements", IFRS 11 "Joint Arrangements", IFRS 12 "Disclosure of Interests in Other Entities", IAS 27 "Separate Financial Statements" and IAS 28 "Investments in Associates and Joint Ventures" were all issued in May 2011. Each of the standards issued in May 2011 are effective for fiscal years beginning on or after January 1, 2013. In October 2012 "Investment Entities" (Amendments to IFRS 10, IFRS 12 and IAS 27) was issued. The October 2012 amendments are effective for fiscal years beginning on or after January 1, 2014.

IFRS 10 replaces the consolidation guidance in IAS 27 "Separate Financial Statements" and Standards Interpretation Committee ("SIC")-12 "Consolidation – Special Purpose Entities" and introduces a single consolidation model for all entities based on control, irrespective of the nature of the investee. Under IFRS 10, control results from an investor having: 1) power over the investee; 2) exposure or rights to variable returns from its involvement with the investee; and 3) the ability to use its power over the investee to affect the amount of the returns. The adoption of IFRS 10 is expected to result in deconsolidation of certain investments in private equity funds, a timber fund and certain of the Company's financing trusts from the consolidated financial statements. The Company is evaluating the impact of adopting IFRS 10 on its segregated funds. The adoption of IFRS 10 is not expected to have a significant impact on the Company's consolidated financial statements.

IFRS 11 introduces new accounting requirements for joint arrangements, replacing IAS 31 "Interests in Joint Ventures". The option to apply the proportional consolidation method when accounting for jointly controlled entities is removed. The adoption of IFRS 11 will not have a significant impact on the consolidated financial statements as the Company does not have significant joint venture arrangements.

IFRS 12 requires enhanced disclosures about both consolidated entities and unconsolidated entities in which an entity has involvement. The objective of IFRS 12 is to present information so that financial statement users may evaluate the basis of control, any restrictions on consolidated assets and liabilities, risk exposures arising from involvements with unconsolidated structured entities and non-controlling interest holders' involvement in the activities of consolidated entities, and of associates and joint ventures. The adoption of IFRS 12 will not have a significant impact on the Company's consolidated financial statements.

Investment Entities (Amendments to IFRS 10, IFRS 12 and IAS 27) establishes the definition of an investment entity using principles commonly found in the mutual fund industry. The amendments require investment entities to use fair value accounting for all of their investments, including those which they control or have significant influence over. The amendments include a scope change for IFRS 10 so Investment Entities, as defined, will be exempt from applying consolidation accounting to their investments. The adoption of these amendments will not have a significant impact on the Company's consolidated financial statements.

**(b) Amendments to IAS 19 "Employee Benefits"**

The amendments to IAS 19 "Employee Benefits" were issued in June 2011. The amendments require the full funded status of the plan to be reflected as the net defined benefit liability or asset in the Consolidated Statements of Financial Position and eliminate the corridor approach for amortization of actuarial gains and losses. This will result in actuarial gains and losses being recognized in full in OCI when they occur rather than being recognized in net income. Past service costs or credits will be immediately recognized in income when a plan is amended. Interest costs and expected return on plan assets under current IAS 19 will be replaced with a net interest amount calculated by applying the discount rate to the net defined benefit liability or asset. Further, these amendments include enhanced disclosures about the characteristics of the pension and other post-employment benefit plans and the risks to which the entity is exposed through participation in these plans. Some of these enhanced disclosures have been incorporated into note 17 to the 2012 Consolidated Financial Statements.

The amendments to IAS 19 are effective for fiscal years beginning on or after January 1, 2013. The following is a summary of the expected impacts of the adoption of the amendments to IAS 19 in respect of all Company pension and other post-employment plans as at and for the year ended December 31, 2012. These adjustments will be recognized in 2013 by restating 2012 to reflect the impact of the amendments.

| (C$ millions) | Pension plans | Other post-employment benefits | Total |
|---|---|---|---|
| Increase (decrease) in defined benefit liability | **$ 872** | **$ (33)** | **$ 839** |
| Increase (decrease) in deferred tax liability | **(277)** | **11** | **(266)** |
| Increase (decrease) in AOCI | **(669)** | **15** | **(654)** |
| Increase (decrease) in 2012 net income | **74** | **(7)** | **67** |

**(c) IFRS 13 "Fair Value Measurement"**

IFRS 13 "Fair Value Measurement" was issued in May 2011 and replaces existing IFRS guidance on fair value measurement with a single standard. IFRS 13 defines fair value, provides guidance on how to determine fair value and requires disclosures about fair value measurements. IFRS 13 does not change the requirements regarding which items should be measured or disclosed at fair value. The standard is effective for fiscal years beginning on or after January 1, 2013. The adoption of IFRS 13 will result in additional financial statement disclosure but will not have a significant impact on the Company's consolidated financial statements.

**(d) Amendments to IAS 1 "Presentation of Financial Statements"**

An amendment to IAS 1 was issued in June 2011 requiring changes to the presentation of items of other comprehensive income. Under the amendments, presentation of items within other comprehensive income will be separately presented based on whether or not the item will be subsequently reclassified into net income. The amendments are effective for the Company for fiscal years beginning on or after January 1, 2013. The adoption of these amendments will not have a significant impact on the Company's consolidated financial statements.

**(e) Amendments to IFRS 7 "Financial Instruments: Disclosure"**
**Amendments to IAS 32 "Financial Instruments: Presentation"**

The amendments to IFRS 7 – "Offsetting Financial Assets and Financial Liabilities" issued in December 2011 introduce new disclosure requirements for financial instruments relating to their rights of offset and related arrangements under an enforceable master netting agreement or similar arrangements. The amendments to IFRS 7 are effective for fiscal years beginning on or after January 1, 2013. The adoption of this amendment will not have a significant impact on the Company's consolidated financial statements.

The amendments to IAS 32 – "Offsetting Financial Assets and Financial Liabilities" also issued in December 2011 clarify the basis for offsetting financial instruments presented in the statement of financial position. The amendments to IAS 32 are effective for fiscal years beginning on or after January 1, 2014. The adoption of this amendment will not have a significant impact on the Company's consolidated financial statements.

**(f) IFRS 9 "Financial Instruments"**

IFRS 9 "Financial Instruments" issued in November 2009 and amended in October 2010 is the first phase of a three phase project to replace IAS 39 "Financial Instruments: Recognition and Measurement". IFRS 9 currently 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, revisions have been made in the accounting for changes in fair value of a financial liability attributable to changes in the credit risk of that liability. The other phases of this project which are currently under development include impairment of financial assets and hedge accounting.

IFRS 9 is effective for fiscal years beginning on or after January 1, 2015. The Company is assessing the impact of IFRS 9 on its consolidated financial statements in conjunction with the completion of the other phases of this project and other IASB projects.

**Differences between IFRS and Hong Kong Financial Reporting Standards**

The consolidated financial statements of Manulife Financial are presented in accordance with IFRS. IFRS differs in certain respects from Hong Kong Financial Reporting Standards ("HKFRS").

The primary difference between IFRS and HKFRS is the determination of policy liabilities. In certain interest rate environments, policy 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, 2012, the Company has sufficient assets to meet the minimum solvency requirements under both Hong Kong regulatory requirements and IFRS.

# U.S. GAAP Disclosures

***With the adoption of IFRS in 2011, the Company is no longer required to reconcile its annual financial results to U.S. GAAP in the consolidated financial statements. Instead, we have elected to disclose certain consolidated U.S. GAAP information in our MD&A.***

***For the full year 2012, net income in accordance with U.S. GAAP [15] was $2,557 million, $821 million higher than our results under IFRS. As we are no longer reconciling our annual financial results under U.S. GAAP in our consolidated financial statements, net income in accordance with U.S. GAAP is considered a non-GAAP financial measure. A reconciliation of the major differences in net income attributed to shareholders is as follows:***

### U.S. GAAP Results

| For the years ended December 31, (C$ millions) | 2012 | 2011[(1)] | 2010 |
|---|---|---|---|
| **Net income (loss) attributed to shareholders in accordance with IFRS** | **$ 1,736** | $ 129 | $ (1,663) |
| **Key earnings differences:** | | | |
| For variable annuity guarantee liabilities | **$ (1,225)** | $ 2,927 | $ 214 |
| Related to the impact of mark-to-market accounting and investing activities on investment income and policy liabilities | **432** | (120) | 1,147 |
| New business differences including acquisition costs | **(650)** | (322) | (202) |
| Charges due to lower fixed income ultimate reinvestment rate assumptions used in the valuation of policy liabilities under IFRS | **677** | 437 | 309 |
| Changes in actuarial methods and assumptions, excluding URR | **492** | 349 | 1,614 |
| Goodwill impairment charge | **200** | 153 | 91 |
| Changes related to major reinsurance transactions | **60** | (303) | – |
| Other differences | **835** | 424 | 142 |
| **Total earnings difference** | **$ 821** | $ 3,545 | $ 3,315 |
| **Net income attributed to shareholders in accordance with U.S. GAAP** | **$ 2,557** | $ 3,674 | $ 1,652 |

(1) Restated as a result of adopting Accounting Standards Update No. 2010-26, 'Accounting for Costs Associated with Acquiring or Renewing Insurance Contracts' ('ASU 2010-26') effective January 1, 2012 but requiring application to 2011. The impact to full year 2011 was a net decrease in earnings of $48 million, all of which is included in 'New business differences including acquisition costs'.

*Accounting for variable annuity guarantee liabilities* – IFRS follows a predominantly "mark-to-market" accounting approach to measure variable annuity guarantee liabilities while U.S. GAAP only uses "mark-to-market" accounting for certain benefit guarantees. The U.S. GAAP accounting results in an accounting mismatch between the hedged assets supporting the dynamically hedged guarantees and the guarantees not accounted for on a mark-to-market basis. Another difference is that U.S. GAAP reflects the Company's own credit standing in the measurement of the liability. In 2012, we reported a net gain of $29 million (2011 – $682 million; 2010 – $4 million) in our total variable annuity businesses under U.S. GAAP compared to a net gain of $1,254 million under IFRS (2011 – net loss of $2,245 million; 2010 – net loss of $210 million).

*Investment income and policy liabilities* – Under IFRS, accumulated unrealized gains and losses arising from fixed income investments and interest rate derivatives supporting policy liabilities are largely offset in the valuation of the policy liabilities. The 2012 IFRS impacts on insurance liabilities of fixed income reinvestment assumptions, general fund equity investments, fixed income and alternative long-duration asset investing total a net gain of $475 million (2011 – gain of $941 million; 2010 – loss of $473 million) compared to U.S. GAAP net realized gains and other investment income of $907 million (2011 – gain of $821 million; 2010 – gain of $674 million).

*Differences in the treatment of acquisition costs and other new business items* – Acquisition costs that are related to and vary with the production of new business are explicitly deferred and amortized under U.S. GAAP but are recognized as an implicit reduction in insurance liabilities along with other new business gains and losses under IFRS. In 2012, IFRS results benefited from lower new business strain compared to U.S. GAAP.

*Changes due to lower IFRS fixed income ultimate reinvestment rates* – The $677 million charge (2011 – $437 million; 2010 – $309 million) in IFRS related to the update of the fixed income ultimate reinvestment rate actuarial assumptions had no direct impact on U.S. GAAP results.

*Changes in actuarial methods and assumptions* – The charges recognized under IFRS from the annual review of actuarial methods and assumptions of $1,081 million (2011 – $751 million; 2010 – $1,766 million) excluding URR charges, compared to charges of $589 million (2011 – $402 million; 2010 – $152 million) on a U.S. GAAP basis. The charges on a U.S. GAAP basis related primarily to changes in assumptions driven by the macro-economic environment.

15 Net income in accordance with U.S. GAAP is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

*Goodwill impairment* – In 2012 we recorded a $200 million IFRS goodwill impairment charge related to our Canadian Individual Insurance business. There was no impact on a U.S. GAAP basis. In 2011, under IFRS we recorded a $665 million IFRS goodwill impairment charge representing the remaining goodwill attributable to our U.S. Life insurance business compared to $512 million goodwill impairment charge under U.S. GAAP attributable to our U.S. Wealth management businesses. The difference in amounts and business units affected is primarily attributable to the more granular approach applied under IFRS.

*Impact of major reinsurance transactions* – In 2012 we completed a coinsurance transaction related to the John Hancock block of fixed deferred annuities as well as the recapture of our Par Life block of business in Canadian Individual Life Insurance. In 2011 we sold our Life Retrocession business to Pacific Life. The accounting for these transactions is different under IFRS versus U.S. GAAP.

Total equity in accordance with U.S. GAAP [16] as at December 31, 2012 was approximately $16 billion higher than under IFRS. Of this difference, approximately $10 billion was attributable to the higher cumulative net income on a U.S. GAAP basis. The remaining difference was primarily attributable to the treatment of unrealized gains on fixed income investments and derivatives in a cash flow hedging relationship which are reported in equity under U.S. GAAP, but where the investments and derivatives are supporting policy liabilities, these accumulated unrealized gains are largely offset in the valuation of the policy liabilities under IFRS. The fixed income investments and derivatives have significant unrealized gains as a result of the current low levels of interest rates. The majority of the difference in equity between the two accounting bases as at December 31, 2012 arises from our U.S. businesses.

A reconciliation of the major differences in total equity is as follows:

| **As at December 31,** (C$ millions) | **2012** | 2011[1] | 2010 |
|---|---|---|---|
| **Total equity in accordance with IFRS** | **$ 26,096** | $ 24,879 | $ 24,675 |
| Differences in shareholders' retained earnings and participating policyholders' equity | **9,793** | 8,869 | 6,600 |
| Difference in Accumulated Other Comprehensive Income attributable to: | | | |
| (i) AFS securities and others; | **4,967** | 4,473 | 1,723 |
| (ii) Cash flow hedges; and | **2,440** | 2,570 | 458 |
| (iii) Translation of net foreign operations [2] | **(1,481)** | (1,309) | (1,418) |
| Differences in share capital, contributed surplus and non-controlling interest in subsidiaries | **40** | 148 | 162 |
| **Total equity in accordance with U.S. GAAP** | **$ 41,855** | $ 39,630 | $ 32,200 |

[1] 2011 equity has been restated to reflect the adoption of ASU No. 2010-26.
[2] Reflects the net difference in the currency translation account after the reset to zero through retained earnings upon adoption of IFRS at January 1, 2010.

[16] Total equity in accordance with U.S. GAAP is a non-GAAP measure. See "Performance and Non-GAAP Measures" below.

# 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 Group CFO, to allow timely decisions regarding required disclosure.

As of December 31, 2012, 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 Group CFO. Based on that evaluation, the CEO and Group CFO concluded that our disclosure controls and procedures were effective as at December 31, 2012.

MFC's Audit Committee has reviewed this MD&A and the 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, 2012 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework. Based on this assessment, management believes that, as of December 31, 2012, 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, 2012 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, 2012. Their report expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2012.

**Changes in Internal Control over Financial Reporting**

No changes were made in our internal control over financial reporting during the year ended December 31, 2012 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. Non-GAAP measures include: Core earnings; Core ROE; Core earnings per share; Net income in accordance with U.S. GAAP; Total equity in accordance with U.S. GAAP; Constant currency basis; Premiums and deposits; Funds under management; Capital; Embedded value; New business embedded value; and Sales. Non-GAAP financial measures are not defined terms under GAAP and, therefore, with the exception of Net income in accordance with U.S. GAAP and Total equity in accordance with U.S. GAAP (which are comparable to the equivalent measures of issuers whose financial statements are prepared in accordance with U.S. GAAP), 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 (losses)** is a non-GAAP measure which we use to better understand the long-term earnings capacity and valuation of the business. Core earnings excludes the direct impact of equity markets and interest rates as well as a number of other items, outlined below, that are considered material and exceptional in nature. While this metric 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 Financial Performance section for detailed definition of core earnings and a reconciliation of core earnings to net income attributed to shareholders.

**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 return on common shareholders' equity using average common shareholders' equity.

**Core earnings per share** is core earnings available to common shareholders expressed per weighted average common share outstanding.

**Net income in accordance with U.S. GAAP** is a non-GAAP profitability measure. It shows what the net income would have been if the Company had applied U.S. GAAP as its primary financial reporting basis. We consider this to be a relevant profitability measure given our large U.S. domiciled investor base and for comparability to our U.S. peers who report under U.S. GAAP.

**Total equity in accordance with U.S. GAAP** is a non-GAAP measure. It shows what the total equity would have been if the Company had applied U.S. GAAP as its primary financial reporting basis. We consider this to be a relevant measure given our large U.S. domiciled investor base and for comparability to our U.S. peers who report under U.S. GAAP.

The Company also uses financial performance measures that are prepared on a **constant currency basis**, which exclude the impact of currency fluctuations and which are non-GAAP measures. Quarterly 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 2012.

**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 Statement of Income, (ii) plus adding back the premiums ceded related to FDA coinsurance, (iii) premium equivalents for administration only group benefit contracts, (iv) premiums in the Canadian Group Benefits reinsurance ceded agreement, (v) segregated fund deposits, excluding seed money, (vi) mutual fund deposits, (vii) deposits into institutional advisory accounts, and (viii) other deposits in other managed funds.

**Premiums and deposits**
**For the periods ended December 31,**

| (C$ millions) | Quarterly Results | | Full Year Results | |
|---|---|---|---|---|
| | **4Q 2012** | 4Q 2011 | **2012** | 2011 |
| Premium income | **$ 5,012** | $ 4,540 | **$ 10,734** | $ 17,504 |
| Deposits from policyholders | **5,537** | 5,575 | **22,993** | 21,689 |
| **Premiums and deposits per financial statements** | **$ 10,549** | $ 10,115 | **$ 33,727** | $ 39,193 |
| Add back premiums ceded relating to FDA coinsurance | **2** | – | **7,229** | – |
| Investment contract deposits | **59** | 126 | **212** | 289 |
| Mutual fund deposits | **6,117** | 3,309 | **18,843** | 16,640 |
| Institutional advisory account deposits | **5,376** | 627 | **7,744** | 2,807 |
| ASO premium equivalents | **706** | 666 | **2,819** | 2,679 |
| Group benefits ceded premiums | **1,180** | 941 | **4,430** | 3,754 |
| Other fund deposits | **139** | 133 | **497** | 699 |
| **Total premiums and deposits** | **$ 24,128** | $ 15,917 | **$ 75,501** | $ 66,061 |
| Currency impact | **–** | (372) | **(454)** | 53 |
| **Constant currency premiums and deposits** | **$ 24,128** | $ 15,545 | **$ 75,047** | $ 66,114 |

**Funds under management** is a non-GAAP measure of the size of the Company. It represents the total of the invested asset base in which the Company and its customers invest.

**Funds under management**
**As at December 31,**

| (C$ millions) | **2012** | 2011 |
|---|---|---|
| Total invested assets | **$ 229,928** | $ 226,520 |
| Total segregated fund net assets | **207,985** | 195,933 |
| **Funds under management per financial statements** | **$ 437,913** | $ 422,453 |
| Mutual funds | **59,979** | 49,399 |
| Institutional advisory accounts (excluding segregated funds) | **26,692** | 21,652 |
| Other funds | **7,358** | 6,148 |
| **Total funds under management** | **$ 531,942** | $ 499,652 |
| Currency impact | **–** | (10,991) |
| **Constant currency funds under management** | **$ 531,942** | $ 488,661 |

**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 AOCI on cash flow hedges and (ii) liabilities for preferred shares and capital instruments.

**Capital**
**As at December 31,**

| (C$ millions) | **2012** | 2011 |
|---|---|---|
| **Total equity** | **$ 26,096** | $ 24,879 |
| Add AOCI loss on cash flow hedges | **50** | 91 |
| Add liabilities for preferred shares and capital instruments | **3,501** | 4,012 |
| **Total capital** | **$ 29,647** | $ 28,982 |

**Embedded value** is a measure of shareholders' value embedded in the current balance sheet of the Company, excluding any value associated with future new business.

**New business embedded value** ("NBEV") is the change in shareholders' economic value as a result of sales in the reporting period. NBEV is calculated as the present value of expected future earnings, after the cost of capital, on actual new business sold in the period using future mortality, morbidity, policyholder behaviour, expense and investment assumptions that are consistent with the assumptions used in the valuation of our policy liabilities.

**Sales** are measured according to product type:

- For total individual insurance, sales include 100 per cent of new annualized premiums and 10 per cent 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. Sales are reported gross before the impact of reinsurance. Single premium is the lump sum premium from the sale of a single premium product, e.g., travel insurance.
- 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 individual wealth management contracts, all new deposits are reported as sales. This includes individual annuities, both fixed and variable; mutual funds; college savings 529 plans; and authorized bank loans and mortgages.
- For group pensions/retirement savings, sales of new regular premiums and deposits reflect an estimate of expected deposits in the first year of the plan with the Company. Single premium sales reflect the assets transferred from the previous plan provider. Sales include the impact of the addition of a new division or of a new product to an existing client. Total sales include both new regular and single premiums and deposits.

# 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, 2012, the Company's contractual obligations and commitments are as follows:

| Payments due by period (C$ millions) | Total | Less than 1 year | 1 – 3 years | 3 – 5 years | After 5 years |
|---|---|---|---|---|---|
| Long-term debt[1] | $ 6,657 | $ 611 | $ 3,465 | $ 241 | $ 2,340 |
| Liabilities for capital instruments [1],[2] | 10,450 | 140 | 280 | 280 | 9,750 |
| Purchase obligations | 175 | 48 | 41 | 45 | 41 |
| Operating leases | 756 | 135 | 186 | 63 | 372 |
| Insurance contract liabilities [3] | 479,030 | 6,415 | 7,859 | 10,017 | 454,739 |
| Investment contract liabilities [1] | 4,467 | 280 | 749 | 358 | 3,080 |
| Bank deposits | 18,878 | 15,018 | 2,192 | 1,619 | 49 |
| Other | 1,764 | 934 | 361 | 287 | 182 |
| **Total contractual obligations** | $ 522,177 | $ 23,581 | $ 15,133 | $ 12,910 | $ 470,553 |

(1) The contractual payments include principal, interest and distributions. The contractual payments reflect the amounts payable from January 1, 2013 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, 2012 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) Liabilities for preferred shares – Class A, Series 1 are not included in the contractual obligation table. These preferred shares are redeemable by the Company by payment of cash or issuance of MFC common shares and are convertible at the option of the holder into MFC common shares on or after December 15, 2015.

(3) 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.

In the normal course of business, the Company enters into investment commitments, which are not reflected in the consolidated financial statements. As at December 31, 2012, there were $2,965 million of investment commitments (2011 – $3,431 million), of which $1,420 million matures within one year (2011 – $1,886 million), $879 million matures within one to three years (2011 – $1,068 million), $316 million matures within three to five years (2011 – $391 million) and $350 million matures after five years (2011 – $86 million).

### Legal and Regulatory Proceedings

The Company is regularly involved in legal actions, both as a defendant and as a plaintiff. The legal actions naming the Company as a defendant ordinarily involve its activities as a provider of insurance protection and wealth management products, as well as an investment advisor, employer and taxpayer. 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.

A class action covering Quebec residents only is pending in Quebec against the Company and proposed class action lawsuits against the Company have been filed in Ontario, on behalf of investors in Canada (except for Quebec residents). The actions in Ontario and Quebec are 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.

The Company believes that its disclosure satisfied applicable disclosure requirements and intends to vigorously defend itself against any claims based on these allegations.

Plaintiffs in class action and other lawsuits against the Company may seek very large or indeterminate amounts, including punitive and treble damages, and the damages claimed and the amount of any probable and estimable liability, if any, may remain unknown for substantial periods of time. A substantial legal liability or a significant regulatory action could have a significant adverse effect on the Company's business, results of operations, financial condition and capital position and adversely affect its reputation. Even if the Company ultimately prevails in the litigation, regulatory action or investigation, it could suffer reputational harm, which could have an adverse effect on its business, results of operations, financial condition and capital position, including its ability to attract new customers, retain current customers and recruit and retain employees.

### Key Planning Assumptions and Uncertainties

Manulife's 2016 management objectives do not constitute guidance and are based on certain key planning assumptions, including: current accounting and regulatory capital standards; no acquisitions; equity market and interest rate assumptions consistent with our long-term assumptions, and favourable investment experience included in core earnings.[17]

[17] Interest rate assumptions based on forward curve as of June 30, 2012. Core earnings includes up to $200 million per annum of investment gains.

## 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 (C$ millions, except per share amounts) (unaudited) | Dec 31, 2012 | Sep 30, 2012 | Jun 30, 2012 | Mar 31, 2012 | Dec 31, 2011 | Sep 30, 2011 | Jun 30, 2011 | Mar 31, 2011 |
|---|---|---|---|---|---|---|---|---|
| **Revenue** | | | | | | | | |
| Premium income | | | | | | | | |
| Life and health insurance | **$ 4,356** | **$ 3,413** | **$ 3,719** | **$ 3,473** | $ 3,651 | $ 3,490 | $ 3,452 | $ 3,593 |
| Annuities and pensions | **658** | **573** | **740** | **1,031** | 889 | 772 | 730 | 927 |
| Net premium income prior to FDA coinsurance | **$ 5,014** | **$ 3,986** | **$ 4,459** | **$ 4,504** | $ 4,540 | $ 4,262 | $ 4,182 | $ 4,520 |
| Premiums ceded relating to FDA coinsurance [1] | **(2)** | **(1,799)** | **(5,428)** | **–** | – | – | – | – |
| Investment income | **2,095** | **2,185** | **2,923** | **1,589** | 2,034 | 3,697 | 2,609 | 2,027 |
| Realized and unrealized gains (losses) on assets supporting insurance and investment contract liabilities [2] | **(1,600)** | **1,419** | **7,297** | **(4,066)** | 1,360 | 13,491 | 2,266 | (1,247) |
| Other revenue | **1,690** | **1,831** | **2,045** | **1,790** | 1,765 | 2,005 | 1,708 | 1,764 |
| **Total revenue** | **$ 7,197** | **$ 7,622** | **$ 11,296** | **$ 3,817** | $ 9,699 | $ 23,455 | $ 10,765 | $ 7,064 |
| Income (loss) before income taxes | **$ 1,057** | **$ (697)** | **$ (481)** | **$ 1,290** | $ 119 | $ (1,799) | $ 532 | $ 1,296 |
| Income tax (expense) recovery | **22** | **367** | **194** | **(60)** | (174) | 615 | (37) | (307) |
| **Net income (loss)** | **$ 1,079** | **$ (330)** | **$ (287)** | **$ 1,230** | $ (55) | $ (1,184) | $ 495 | $ 989 |
| **Net income (loss) attributed to shareholders** | **$ 1,057** | **$ (227)** | **$ (300)** | **$ 1,206** | $ (69) | $ (1,277) | $ 490 | $ 985 |
| **Basic earnings (loss) per common share** | **$ 0.56** | **$ (0.14)** | **$ (0.18)** | **$ 0.66** | $ (0.05) | $ (0.73) | $ 0.26 | $ 0.54 |
| **Diluted earnings (loss) per common share** | **$ 0.56** | **$ (0.14)** | **$ (0.18)** | **$ 0.62** | $ (0.05) | $ (0.73) | $ 0.26 | $ 0.53 |
| **Segregated funds deposits** | **$ 5,537** | **$ 5,539** | **$ 5,623** | **$ 6,294** | $ 5,575 | $ 5,109 | $ 5,086 | $ 5,919 |
| **Total assets** | **$ 486,056** | **$ 480,683** | **$ 479,494** | **$ 465,164** | $ 461,977 | $ 454,969 | $ 427,462 | $ 423,279 |
| **Weighted average common shares** (in millions) | **1,822** | **1,816** | **1,808** | **1,802** | 1,795 | 1,789 | 1,783 | 1,778 |
| **Diluted weighted average common shares** (in millions) | **1,854** | **1,816** | **1,808** | **1,919** | 1,795 | 1,789 | 1,871 | 1,861 |
| **Dividends per common share** | **$ 0.13** | **$ 0.13** | **$ 0.13** | **$ 0.13** | $ 0.13 | $ 0.13 | $ 0.13 | $ 0.13 |
| **CDN$ to US$1 – Statement of Financial Position** | **0.9949** | **0.9837** | **1.0191** | **0.9991** | 1.0170 | 1.0389 | 0.9643 | 0.9718 |
| **CDN$ to US$1 – Statement of Income** | **0.9914** | **0.9953** | **1.0105** | **1.0011** | 1.0232 | 0.9807 | 0.9679 | 0.9855 |

[1] On June 29, 2012 and September 25, 2012, the Company entered into coinsurance agreements to reinsure 89 per cent of its book value fixed deferred annuity business. Under the terms of the agreements, the Company will maintain responsibility for servicing of the policies and some of the assets and has retained the remaining exposure.

[2] 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.

## Selected Annual Financial Information

| As at and for the years ended December 31, (C$ millions, except per share amounts) | 2012 | 2011 | 2010 |
|---|---|---|---|
| **Revenue** | | | |
| Asia Division | **$ 10,629** | $ 8,428 | $ 7,403 |
| Canadian Division | **10,229** | 11,942 | 10,023 |
| U.S. Division | **16,934** | 28,415 | 18,131 |
| Corporate and Other | **(631)** | 2,198 | 2,061 |
| **Total revenue** | **$ 37,161** | $ 50,983 | $ 37,618 |
| **Total assets** | **$ 486,056** | $ 461,977 | $ 424,619 |
| **Long-term financial liabilities** | | | |
| Long-term debt | **$ 5,452** | $ 5,503 | $ 5,841 |
| Liabilities for preferred shares and capital instruments | **3,501** | 4,012 | 4,004 |
| **Total** | **$ 8,953** | $ 9,515 | $ 9,845 |
| Dividend per common share | **$ 0.52** | $ 0.52 | $ 0.52 |
| Cash dividend per Class A Share, Series 1 | **$ 1.025** | $ 1.025 | $ 1.025 |
| Cash dividend per Class A Share, Series 2 | **$ 1.16252** | $ 1.16252 | $ 1.16252 |
| Cash dividend per Class A Share, Series 3 | **$ 1.125** | $ 1.125 | $ 1.125 |
| Cash dividend per Class A Share, Series 4 | **$ 1.65** | $ 1.65 | $ 1.65 |
| Cash dividend per Class 1 Share, Series 1 | **$ 1.40** | $ 1.40 | $ 1.40 |
| Cash dividend per Class 1 Share, Series 3 | **$ 1.05** | $ 0.81267 | $ – |
| Cash dividend per Class 1 Share, Series 5 | **$ 1.10** | $ – | $ – |
| Cash dividend per Class 1 Share, Series 7 | **$ 0.94678** | $ – | $ – |
| Cash dividend per Class 1 Share, Series 9 | **$ 0.63062** | $ – | $ – |

### Additional Information Available

Additional information relating to Manulife Financial, 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

### Class A Shares Series 1

As at March 12, 2013, MFC had 14 million Class A Shares Series 1 ("Series 1 Preferred Shares") outstanding at a price of $25.00 per share, for an aggregate amount of $350 million. The Series 1 Preferred Shares are non-voting and are entitled to non-cumulative preferential cash dividends payable quarterly, if and when declared, at a per annum rate of 4.10%. With regulatory approval, the Series 1 Preferred Shares may be redeemed by MFC, in whole or in part, at declining premiums that range from $1.25 to nil per Series 1 Preferred Share, by either payment of cash or the issuance of MFC common shares. On or after December 19, 2015, the Series 1 Preferred Shares will be convertible at the option of the holder into MFC common shares, the number of which is determined by a prescribed formula, and is subject to the right of MFC prior to the conversion date to redeem for cash or find substitute purchasers for such preferred shares. The prescribed formula is the face amount of the Series 1 Preferred Shares divided by the greater of $2.00 and 95% of the then market price of MFC common shares.

### Common Shares

As at March 12, 2013, MFC had 1,827,725,539 common shares outstanding.

**Exhibit 99.3**

**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: March 15, 2013

*/s/ Donald A. Guloien*
Donald A. Guloien
President and Chief Executive Officer

**Exhibit 99.4**

**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: March 15, 2013

*/s/ Stephen B. Roder*

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

**Exhibit 99.5**

**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, 2012, 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: March 15, 2013

/s/ Donald A. Guloien

Name: Donald A. Guloien
Title: President and Chief Executive 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, 2012, 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: March 15, 2013

*/s/ Stephen B. Roder*
Stephen B. Roder
Senior Executive Vice President and Chief Financial Officer

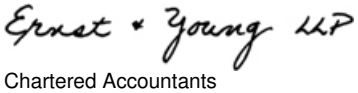
**Exhibit 99.7**

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the use of our Independent Auditors' Report of Registered Public Accounting Firm to the Shareholders and our Independent Auditors' Report on Internal Controls under Standards of the Public Company Accounting Oversight Board (United States) dated March 15, 2013, with respect to the consolidated financial statements of Manulife Financial Corporation, and the effectiveness of internal control over financial reporting of Manulife Financial Corporation as at December 31, 2012, included in the 2012 Annual Report (Form 40-F) of Manulife Financial Corporation.

We consent to the incorporation by reference of our Independent Auditors' Report of Registered Public Accounting Firm to the Shareholders and our Independent Auditors' Report on Internal Controls referred to above 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. 333-91102) of Manulife Financial Corporation pertaining to the Manulife Financial Corporation Director Equity Incentive 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 F-10 No. 333-182632) 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 No. 333-183233-01 and 333-183233) 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 No. 333-179261-01 and 333-179261) 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 No. 333-168694-01 and 333-168694) 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.



Toronto, Canada
March 15, 2013

Chartered Accountants
Licensed Public Accountants

**Exhibit 99.8**

**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, 2012 of my Appointed Actuary's Report to the Shareholders and Directors dated March 15, 2013 (the "Report"), relating to the valuation of the policy liabilities of the Company for its Consolidated Balance Sheets as at December 31, 2012 and 2011 and their change in the Consolidated Statements of Operations for the years then ended.

/s/ Cindy L. Forbes
Cindy L. Forbes
Executive Vice President and Chief Actuary
Fellow, Canadian Institute of Actuaries
Toronto, Canada

Date: March 15, 2013