



Manulife Financial Corporation

Management's Discussion and Analysis

For the three and nine months ended September 30, 2020

MANAGEMENT'S DISCUSSION AND ANALYSIS

This Management's Discussion and Analysis ("MD&A") is current as of November 11, 2020, unless otherwise noted. This MD&A should be read in conjunction with our unaudited Interim Consolidated Financial Statements for the three and nine months ended September 30, 2020 and the MD&A and audited Consolidated Financial Statements contained in our 2019 Annual Report.

For further information relating to our risk management practices and risk factors affecting the Company, see "Risk Factors" in our 2019 Annual Information Form, "Risk Management", "Risk Factors" and "Critical Actuarial and Accounting Policies" in the MD&A in our 2019 Annual Report and the "Risk Management" note to the Consolidated Financial Statements in our most recent annual and interim reports.

In this MD&A, the terms "Company", "Manulife", "we" and "our" mean Manulife Financial Corporation ("MFC") and its subsidiaries. All amounts are reported in Canadian dollars, unless otherwise indicated.

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A TOTAL COMPANY PERFORMANCE

A1 Profitability

(\$ millions, unless otherwise stated)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Net income attributed to shareholders	\$ 2,068	\$ 727	\$ 723	\$ 4,091	\$ 4,374
Core earnings ⁽¹⁾	\$ 1,453	\$ 1,561	\$ 1,527	\$ 4,042	\$ 4,527
Diluted earnings per common share (\$)	\$ 1.04	\$ 0.35	\$ 0.35	\$ 2.04	\$ 2.16
Diluted core earnings per common share (\$) ⁽¹⁾	\$ 0.73	\$ 0.78	\$ 0.76	\$ 2.01	\$ 2.24
Return on common shareholders' equity ("ROE")	16.4%	5.5%	5.9%	10.8%	12.8%
Core ROE ⁽¹⁾	11.4%	12.2%	13.0%	10.6%	13.3%
Expense efficiency ratio ⁽¹⁾	51.2%	48.9%	51.4%	52.9%	51.2%

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

Quarterly profitability

Manulife's net income attributed to shareholders was \$2,068 million in the third quarter of 2020 ("3Q20") compared with \$723 million in the third quarter of 2019 ("3Q19"). Net income attributed to shareholders is comprised of core earnings¹ (consisting of items we believe reflect the underlying earnings capacity of the business), which amounted to \$1,453 million in 3Q20 compared with \$1,527 million in 3Q19, and items excluded from core earnings, which amounted to a net gain of \$615 million in 3Q20 compared with a net charge of \$804 million in 3Q19. The effective tax rate on net income attributed to shareholders in 3Q20 was in-line with 3Q19 at 15%.

Net income attributed to shareholders increased \$1.3 billion compared with 3Q19. The increase was driven by gains from investment-related experience (compared with losses in the prior year quarter), gains from the direct impact of equity markets and interest rates and variable annuity guarantee liabilities (compared with losses in the prior year quarter, which included a \$0.5 billion charge related to updated Ultimate Reinvestment Rate ("URR") assumptions issued by the Canadian Actuarial Standards Board), and the impact of a reinsurance transaction to improve the capital efficiency of our legacy business, partially offset by a \$198 million charge from the annual review of actuarial methods and assumptions. Investment-related experience in 3Q20 reflected the favourable impact of fixed income reinvestment activities and higher-than-expected returns (including fair value changes) on our alternative long-duration assets ("ALDA") driven primarily by fair value gains on private equities.

Core earnings decreased \$74 million or 6% compared with 3Q19.² The decrease in core earnings in 3Q20 compared with 3Q19 reflects the absence of core investment gains¹ in the quarter (compared with gains in the prior year quarter), lower investment income in Corporate and Other, unfavourable policyholder experience in our Canadian insurance businesses, and lower new business volumes as a result of COVID-19. These items were partially offset by the impact of in-force business growth, favourable product mix in Hong Kong and Asia Other³, and average AUMA growth in Global Wealth and Asset Management ("Global WAM"). Core earnings in 3Q20 included net policyholder experience losses of \$25 million (\$38 million pre-tax) compared with gains of \$21 million (\$14 million pre-tax) in 3Q19.⁴ Actions to improve the capital efficiency of our legacy businesses resulted in \$5 million lower core earnings in 3Q20 compared with 3Q19.

The components of the items excluded from core earnings are outlined in the table below and the annual review of actuarial methods and assumptions is discussed in section D2 "Actuarial methods and assumptions" below.

Year-to-date profitability

Net income attributed to shareholders for the 9 months ended September 30, 2020 was \$4,091 million compared with \$4,374 million for the 9 months ended September 30, 2019. Year-to-date core earnings amounted to \$4,042 million in 2020 compared with \$4,527 million in the same period of 2019, and items excluded from year-to-date core earnings amounted to a net gain of \$49 million in 2020 compared with a net charge of \$153 million in the same period of 2019. The effective tax rate on year-to-date net income attributed to shareholders was 19% compared with 14% for the same period in 2019, reflecting differences in the jurisdictional mix of pre-tax profits and losses in these periods.

¹ This item is a non-GAAP measure. See "Performance and non-GAAP measures" below.

² Percentage growth / declines in core earnings, core general expenses, pre-tax core earnings, APE sales, gross flows, net flows, NBV, assets under management and administration, assets under management, core EBITDA and Global Wealth and Asset Management revenue are stated on a constant exchange rate basis. Constant exchange rate basis is a non-GAAP measure. See "Performance and non-GAAP measures" below.

³ Asia Other excludes Japan and Hong Kong.

⁴ Policyholder experience includes gains of \$13 million post-tax in 3Q20 (3Q19 – gains of \$42 million post-tax) from the release of margins on medical policies in Hong Kong that have lapsed for customers who have opted to change their existing policies to the new Voluntary Health Insurance Scheme ("VHIS") products. These gains did not have a material impact on core earnings as they were mostly offset by new business strain.

The decrease of \$283 million in year-to-date net income attributed to shareholders in 2020 compared with 2019 reflects a reduction in core earnings of \$485 million and a net gain of \$49 million in items excluded from core earnings in 2020 compared with a net charge in items excluded from core earnings of \$153 million in 2019.

The \$485 million or 12% reduction in year-to-date core earnings compared with the same period of 2019 was driven by the absence of core investment gains (compared with a \$300 million gain in the same period of 2019), lower investment income in Corporate and Other, including the less favourable impact of markets on seed money investments in segregated funds and mutual funds and net losses on available-for-sale (“AFS”) equities in 2020 (compared with net gains in 2019), and lower new business volumes, including lower levels of activity as a result of COVID-19. This was partially offset by favourable policyholder experience, the impact of in-force business growth and average AUMA growth in Global WAM. Year-to-date net policyholder experience gains were \$110 million (\$114 million pre-tax) in 2020 compared with gains of \$6 million (charge of \$17 million pre-tax) in the same period of 2019.¹ Actions to improve the capital efficiency of our legacy businesses resulted in \$31 million lower core earnings in year-to-date 2020 compared with 2019.

Core earnings by segment and the items excluded from core earnings are outlined in the tables below. On a year-to-date basis, the items excluded from core earnings were a net gain of \$49 million in 2020 consisting of a net gain from the direct impact of markets, reinsurance transactions and tax related items, partially offset by a net charge from investment-related experience and change in actuarial methods and assumptions.

Core earnings by segment and components of items excluded from core earnings

Core Earnings by Segment ⁽¹⁾ (\$ millions, unaudited)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Asia	\$ 559	\$ 489	\$ 520	\$ 1,539	\$ 1,511
Canada	279	342	318	858	913
U.S.	498	602	471	1,516	1,387
Global Wealth and Asset Management	308	238	281	796	756
Corporate and Other (excluding core investment gains)	(191)	(110)	(163)	(667)	(340)
Core investment gains ^{(1),(2)}	-	-	100	-	300
Total core earnings	\$ 1,453	\$ 1,561	\$ 1,527	\$ 4,042	\$ 4,527

⁽¹⁾ This item is a non-GAAP measure. See “Performance and non-GAAP measures” below.

⁽²⁾ As outlined in our definition of core earnings in section E3: Up to \$400 million of net favourable investment-related experience will be reported in core earnings in a single year, which are referred to as “core investment gains”. This means up to \$100 million in the first quarter, up to \$200 million on a year-to-date basis in the second quarter, up to \$300 million on a year-to-date basis in the third quarter and up to \$400 million on a full year basis in the fourth quarter. Any investment-related experience losses reported in a quarter will be offset against the net year-to-date investment-related experience gains with the difference being included in core earnings subject to a maximum of the year-to-date core investment gains and a minimum of zero, which reflects our expectation that investment-related experience will be positive through-the-business cycle.

¹ Year-to-date policyholder experience includes gains of \$47 million post-tax in 2020 (2019 – gains of \$63 million post-tax) from the release of margins on medical policies in Hong Kong that have lapsed for customers who have opted to change their existing policies to the new VHIS products. These gains did not have a material impact on year-to-date core earnings as they were mostly offset by new business strain.

Items excluded from core earnings (\$ millions, unaudited)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Investment-related experience outside of core earnings ⁽¹⁾	\$ 147	\$ (916)	\$ (289)	\$ (1,377)	\$ 184
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities ⁽²⁾	390	73	(494)	1,255	(389)
<i>Direct impact of equity markets and variable annuity guarantee liabilities</i>	162	568	(38)	(579)	331
<i>Fixed income reinvestment rates assumed in the valuation of policy liabilities</i>	142	(1,995)	(213)	(169)	(547)
<i>Sale of AFS bonds and, impact of derivative positions in the Corporate and Other segment</i>	86	1,500	257	2,003	327
<i>Changes to the ultimate reinvestment rate</i>	-	-	(500)	-	(500)
Change in actuarial methods and assumptions ⁽³⁾	(198)	-	(21)	(198)	(21)
Reinsurance transactions ⁽⁴⁾	276	9	-	297	115
Tax related items and other	-	-	-	72	(42)
Items excluded from core earnings	\$ 615	\$ (834)	\$ (804)	\$ 49	\$ (153)

⁽¹⁾ Total investment-related experience in 3Q20 was a net gain of \$147 million, compared with a net charge of \$189 million in 3Q19, and in accordance with our definition of core earnings, we included no investment-related experience gains in core earnings and a \$147 million gain in items excluded from core earnings in 3Q20 (gains of \$100 million and a charge of \$289 million, respectively, in 3Q19). Investment-related experience gains in 3Q20 reflected the favourable impact of fixed income reinvestment activities and higher-than-expected returns (including fair value changes) on alternative long-duration assets ("ALDA") primarily driven by fair value gains on private equity, partially offset by modest credit losses and the estimated impact of the sale of NAL Resources Limited ("NAL"), a wholly-owned oil & gas subsidiary, to Whitecap Resources Inc. which is expected to close on January 4, 2021. Under the arrangement, we will receive publicly traded shares in Whitecap Resources Inc. in exchange for all of the issued and outstanding shares of NAL. Investment-related experience charges in 3Q19 reflected lower-than-expected returns (including fair value changes) on ALDA partially offset by favourable credit experience.

⁽²⁾ The direct impact of markets was a net gain of \$390 million in 3Q20 driven by strong equity market performance, higher fixed income reinvestment rates and gains on the sale of available-for-sale ("AFS") bonds. The gain from fixed income reinvestment rates reflected nonparallel movement in swap spreads, partially offset by narrowing corporate spreads, primarily in the U.S. The direct impact of markets was a net charge of \$494 million in 3Q19 and included a \$500 million charge related to changes to the URR. In July 2019, the Canadian Actuarial Standards Board ("ASB") issued new assumptions with reductions to the URR and updates to the calibration criteria for stochastic risk-free rates. The updated standard included a reduction of 15 basis points in the URR and a corresponding change to stochastic risk-free rate modeling and was effective October 15, 2019. The long-term URR for risk-free rates in Canada is prescribed at 3.05% and we use the same assumption for the U.S. Our assumption for Japan is 1.6%. The ASB is currently conducting another review of the URR with any changes expected to be announced and implemented in 2021. The 3Q19 charges related to fixed income reinvestment rates was offset by gains on the sale of AFS bonds. The charges for fixed income reinvestment rates related to changes in the yield curve and the second order impact of changes in actuarial methods and assumptions.

⁽³⁾ Refer to section D2 "Actuarial methods and assumptions" below for detail.

⁽⁴⁾ In 3Q20, reinsurance transactions in the U.S., Asia and Canada contributed gains of \$262 million, \$8 million and \$6 million, respectively.

The **expense efficiency ratio**¹ was 51.2% for 3Q20, compared with 51.4% in 3Q19. The 0.2 percentage point improvement in the ratio compared with 3Q19 was driven by a reduction in general expenses included in core earnings ("core general expenses")¹ of 5%, partially offset by a 4% decline in pre-tax core earnings.¹ The reduction in core general expenses reflects the results of our efficiency programs, as well as temporary reductions in discretionary and distribution spending.

On a year-to-date basis, the expense efficiency ratio was 52.9% in 2020 compared with 51.2% in 2019. The 1.7 percentage point increase in the ratio compared with 2019 was driven by a 10% decline in year-to-date pre-tax core earnings, partially offset by 3% lower year-to-date core general expenses.

¹ This item is a non-GAAP measure. See "Performance and non-GAAP measures" below.

A2 Business Performance⁽¹⁾

(\$ millions, unaudited)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Asia APE sales	\$ 1,005	\$ 784	\$ 1,052	\$ 2,873	\$ 3,303
Canada APE sales	\$ 289	\$ 238	\$ 235	\$ 903	\$ 786
U.S. APE sales	\$ 136	\$ 154	\$ 156	\$ 431	\$ 453
Total APE sales	\$ 1,430	\$ 1,176	\$ 1,443	\$ 4,207	\$ 4,542
Asia new business value	\$ 365	\$ 298	\$ 430	\$ 1,019	\$ 1,205
Canada new business value	\$ 67	\$ 46	\$ 51	\$ 190	\$ 178
U.S. new business value	\$ 28	\$ 40	\$ 45	\$ 104	\$ 141
Total new business value	\$ 460	\$ 384	\$ 526	\$ 1,313	\$ 1,524
Global Wealth and Asset Management net flows (\$ billions)	\$ (2.2)	\$ 5.1	\$ (4.4)	\$ 6.1	\$ (5.8)
Global Wealth and Asset Management gross flows (\$ billions)	\$ 27.5	\$ 33.1	\$ 28.0	\$ 98.7	\$ 81.3
Global Wealth and Asset Management assets under management and administration (\$ billions)	\$ 715.4	\$ 696.9	\$ 659.2	\$ 715.4	\$ 659.2

⁽¹⁾ These items are non-GAAP measures. See "Performance and non-GAAP measures" below.

Annualized premium equivalent ("APE") sales¹ were \$1.4 billion in 3Q20, a decrease of 2% compared with 3Q19. In Asia, APE sales decreased 6% compared with 3Q19 as growth in Japan and Asia Other was more than offset by lower sales in Hong Kong. Hong Kong APE sales decreased 26% compared with 3Q19 driven by the adverse impact of COVID-19, a decrease in sales to mainland Chinese visitors, as well as strong prior year quarter sales of our Voluntary Health Insurance Scheme ("VHIS") and Qualifying Deferred Annuity Policy ("QDAP") products. Japan APE sales increased 9% compared with 3Q19 as we gained traction in the corporate-owned life insurance ("COLI") market following the launch of our re-designed COLI product in 3Q19, partially offset by the adverse impact of COVID-19. Asia Other APE sales increased 3% compared with 3Q19 driven by higher agency sales, partially offset by lower bancassurance sales due to restricted activities in bank branches and temporary bank closures. In Canada, APE sales increased 23% compared with 3Q19 primarily driven by higher large-case group insurance sales, partially offset by lower individual insurance sales due to the adverse impact of COVID-19. In the U.S., APE sales declined 14% compared with 3Q19 largely due to the adverse impacts of COVID-19. In addition, lower international universal life, domestic protection universal life, and variable universal life sales were partially offset by higher domestic indexed universal life and term life sales.

Year-to-date APE sales of \$4.2 billion in 2020 were 9% lower than the same period of 2019, driven by lower sales in Asia and the U.S. partially offset by higher sales in Canada.

New business value ("NBV")¹ was \$460 million in 3Q20, a decrease of 14% compared with 3Q19. In Asia, NBV of \$365 million was down 16% compared with 3Q19, primarily driven by lower APE sales and a decline in interest rates in Hong Kong. In Canada, NBV of \$67 million was up 31% compared with 3Q19, primarily due to higher sales volumes in large-case group insurance. In the U.S., NBV of \$28 million was down 38% compared with 3Q19, primarily driven by lower international universal life sales due to COVID-19.

Year-to-date NBV was \$1.3 billion in 2020, a decrease of 15% compared with the same period of 2019 largely due to lower NBV in Japan as a result of lower APE sales and an unfavourable business mix.

Global Wealth and Asset Management ("Global WAM") reported net outflows¹ of \$2.2 billion in 3Q20 compared with net outflows of \$4.4 billion in 3Q19. Net inflows in Asia were \$1.1 billion in 3Q20, compared with net inflows of \$2.3 billion in 3Q19, driven by higher retail redemptions in mainland China. Net inflows in Canada were \$1.2 billion in 3Q20 compared with net outflows of \$6.9 billion in 3Q19, driven by the non-recurrence of an \$8.5 billion redemption in Institutional Asset Management. Net outflows in the U.S. were \$4.5 billion in 3Q20 compared with net inflows of \$0.1 billion in 3Q19, driven by a \$5.0 billion redemption of an equity mandate in Institutional Asset Management, coupled with lower plan sales and recurring deposits, as well as higher member withdrawals in Retirement.

Year-to-date net inflows were \$6.1 billion in 2020, compared with net outflows of \$5.8 billion in the same period of 2019, primarily driven by institutional asset management from the non-recurrence of an \$8.5 billion redemption in 3Q19 noted above and the funding of a \$6.9 billion mandate from a new client in Canada in the second quarter of 2020 ("2Q20") partially offset by the above-noted \$5.0 billion redemption of an equity mandate in the U.S. in 3Q20.

¹ This item is a non-GAAP measure. See "Performance and non-GAAP measures" below.

A3 Financial strength

(unaudited)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
MLI's LICAT ratio	155%	155%	146%	155%	146%
Financial leverage ratio	26.7%	26.0%	26.1%	26.7%	26.1%
Total consolidated capital (\$ billions) ⁽¹⁾	\$ 62.1	\$ 61.8	\$ 59.1	\$ 62.1	\$ 59.1
Book value per common share (\$)	\$ 25.49	\$ 25.14	\$ 23.51	\$ 25.49	\$ 23.51
Book value per common share excluding AOCI (\$)	\$ 21.13	\$ 20.36	\$ 19.60	\$ 21.13	\$ 19.60

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

The Life Insurance Capital Adequacy Test ("LICAT") ratio for The Manufacturers Life Insurance Company ("MLI") as at September 30, 2020 was 155%, unchanged from June 30, 2020. The impacts of a net capital issuance and reinsurance of a block of U.S. Bank-Owned Life Insurance ("BOLI") business were offset mainly by the overall movement in markets and the capital impact of investment activities.

MFC's LICAT ratio was 141% as at September 30, 2020, compared with 143% as at June 30, 2020. The difference between the MLI and MFC ratios as at September 30, 2020 was largely due to the \$6.5 billion of MFC senior debt outstanding that does not qualify as available capital at the MFC level but, based on the form it was down-streamed to MLI, it qualifies as regulatory capital at the MLI level.

MFC's financial leverage ratio as at September 30, 2020 was 26.7%, an increase of 0.7 percentage points from 26.0% as at June 30, 2020. The increase in the ratio was driven by net issuance of U.S. dollar denominated debt (US\$655 million net) and the unfavourable impact of a stronger Canadian dollar, partially offset by an increase in retained earnings in the quarter.

MFC's total consolidated capital¹ was \$62.1 billion as at September 30, 2020, an increase of \$4.7 billion compared with \$57.4 billion as at December 31, 2019. The increase was primarily driven by growth in retained earnings, the impact of a weaker Canadian dollar, an increase in the unrealized gain balance of AFS debt securities and the net issuance of subordinated debt.

Book value per common share as at September 30, 2020 was \$25.49, an increase of 10% compared with \$23.25 as at December 31, 2019. Book value per common share excluding accumulated other comprehensive income ("AOCI") was \$21.13 as at September 30, 2020, an increase of 6% compared with \$19.94 as at December 31, 2019. Common shareholders' equity increased for similar reasons as outlined above. The number of common shares outstanding was 1,940 million as at September 30, 2020 and was 1,949 million as at December 31, 2019.

A4 Revenue

(\$ millions, unaudited)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Gross premiums	\$ 10,376	\$ 9,538	\$ 10,508	\$ 30,639	\$ 30,524
Premiums ceded to reinsurers	(4,370)	(1,305)	(1,173)	(7,045)	(4,184)
Net premium income	6,006	8,233	9,335	23,594	26,340
Investment income	3,521	5,262	3,932	12,067	11,389
Other revenue	2,749	2,365	2,770	8,094	7,966
Revenue before realized and unrealized investment gains and losses	12,276	15,860	16,037	43,755	45,695
Realized and unrealized gains and losses on assets supporting insurance and investment contract liabilities and on the macro hedge program	1,100	11,626	6,592	17,284	22,703
Total revenue	\$ 13,376	\$ 27,486	\$ 22,629	\$ 61,039	\$ 68,398

Total revenue in 3Q20 was \$13.4 billion compared with \$22.6 billion in 3Q19. The amount of revenue reported in any fiscal period can be significantly affected by fair value accounting, which can materially impact the reported realized and unrealized investment gains or losses on assets supporting insurance and investment contract liabilities and on the macro hedge program, a component of revenue (see "Impact of fair value accounting" below). Accordingly, we discuss specific drivers of revenue in each segment before realized and unrealized investment gains and losses in section B "Performance by Segment" below.

¹ This item is a non-GAAP measure. See "Performance and non-GAAP measures" below.

3Q20 revenue before realized and unrealized investment gains and losses of \$12.3 billion decreased \$3.8 billion compared with 3Q19 primarily due to a large ceded premium from the reinsurance of a block of our legacy U.S. BOLI business and lower investment income in the Corporate and Other segment.

Net realized and unrealized investment gains and losses on assets supporting insurance and investment contract liabilities and on the macro hedge program was a net gain of \$1.1 billion in 3Q20 compared with a net gain of \$6.6 billion in 3Q19. The 3Q20 gain was due the impact of declines in interest rates on corporate bonds, primarily in the U.S., and fair value gains on private equities. The impact of growth in equity markets in North America and Asia was mostly offset by losses from derivatives hedging of our equity exposure. The 3Q19 gain was primarily due to an overall decrease in interest rates in North America and Asia.

On a year-to-date basis, revenue before net realized and unrealized investment gains and losses of \$43.8 billion was \$1.9 billion lower than the same period of 2019 due to the large ceded premium in 3Q20 noted above. The decrease was partially offset by higher investment income, the one-time ceded premium from the reinsurance of legacy annuity business in 2019 and the impact of changes in foreign currency exchange rates. Net realized and unrealized investment gains and losses on assets supporting insurance and investment contract liabilities and on the macro hedge program was a net gain of \$17.3 billion in 2020 compared with a net gain of \$22.7 billion in 2019. The year-to-date gain in 2020 was primarily due to the impact of interest rate declines in North America and gains from derivatives hedging our equity exposure. The key driver of the fair value impact on a year-to-date basis in 2019 was similar to the factors noted above for the quarter.

See “Impact of fair value accounting” below.

A5 Assets under management and administration (“AUMA”)¹

AUMA as at September 30, 2020 was \$1.3 trillion, an increase of 4% compared with December 31, 2019, primarily due to the favourable impact of markets and year-to-date net inflows.

A6 Impact of fair value accounting

Fair value accounting policies affect the measurement of both our assets and our liabilities. The difference between the reported amounts of our assets and liabilities determined as of the balance sheet date and the immediately preceding balance sheet date in accordance with the applicable fair value accounting principles is reported as investment-related experience and the direct impact of equity markets and interest rates and variable annuity guarantees, each of which impacts net income attributed to shareholders (see “Profitability” section above for discussion of 3Q20 experience).

Net realized and unrealized investment gains on assets supporting insurance and investment contract liabilities and on the macro hedge program were \$1.1 billion for 3Q20 (3Q19 – net gains of \$6.6 billion) and on a year-to-date basis, were \$17.3 billion for 2020 (2019 – net gains of \$22.7 billion). See “Revenue” section above for discussion of results.

As outlined in “Critical Actuarial and Accounting Policies” in the MD&A in our 2019 Annual Report, net insurance contract liabilities, under IFRS 4, are determined using Canadian Asset Liability Method (“CALM”), as required by the Canadian Institute of Actuaries (“CIA”). The measurement of policy liabilities includes the estimated value of future policyholder benefits and settlement obligations to be paid over the term remaining on in-force policies, including the costs of servicing the policies, reduced by the future expected policy revenues and future expected investment income on assets supporting the policies. Investment returns are projected using current asset portfolios and projected reinvestment strategies. Experience gains and losses are reported when current period activity differs from what was assumed in the policy liabilities at the beginning of the period. We classify gains and losses by assumption type. For example, current period investing activities that increase (decrease) the future expected investment income on assets supporting the policies will result in an investment-related experience gain (loss). See description of investment-related experience in “Performance and non-GAAP measures” below.

As noted in “Critical Actuarial and Accounting Policies – Future Accounting and Reporting Changes” in the MD&A in our 2019 Annual Report, IFRS 17 is expected to replace IFRS 4 and therefore CALM. In June 2020, the IASB deferred the effective date of the IFRS 17 implementation to January 1, 2023. The new standard will materially change insurance contract measurement and the timing of recognition of earnings. The measurement of the discount rate used to estimate the present value of insurance contract liabilities and the reporting of new business gains are among the more significant changes. We reported \$232 million (post-tax) of new business gains in net income attributed to shareholders in 3Q20 (3Q19 – \$183 million) and \$543 million (post-tax) for year-to-date 2020 (2019 – \$567 million). Under IFRS 17, new business gains are recorded on the balance

¹ This item is a non-GAAP measure. See “Performance and non-GAAP measures” below.

sheet (in the contractual service margin component of the insurance contract liability) and are amortized into income as services are provided.

A7 Impact of foreign currency exchange rates

Changes in foreign currency exchange rates increased core earnings by \$15 million in 3Q20 compared with 3Q19 primarily due to a weaker Canadian dollar compared with the U.S. dollar. Changes in foreign currency exchange rates increased year-to-date core earnings by \$71 million in 2020 compared with the same period of 2019. The impact of foreign currency exchange rates on items excluded from core earnings does not provide relevant information given the nature of those items.

A8 Business highlights

We continued to make progress on our portfolio optimization initiative by executing an agreement with Global Atlantic Financial Group to reinsure approximately \$3.4 billion of policy liabilities related to John Hancock's legacy U.S. BOLI business. John Hancock has retained administration of the policies. The transaction closed on September 30, 2020, released \$465 million in capital, and generated a gain of \$262 million that was reported outside of core earnings in 3Q20.

In 3Q20, we continued to extend our product and distribution reach to fulfill the financial health and well-being needs of our customers. In Asia, we sold our first policy in Myanmar, a digitally savvy market with one of the lowest insurance penetration rates in Asia. In Vietnam, we entered into a partnership with Cong Dong Bau, a community with more than 5 million members that improves access to financial advice and solutions for expectant and new mothers. In Canada, we launched a new travel insurance product that covers emergency medical costs and trip interruption expenses from COVID-19 and related conditions. We further enhanced our Group Benefits product offering with the introduction of Health by Design, a proactive approach using the latest science, technology and predictive analytics to help each member with their unique health journey. In the U.S., we continued to make progress on our objective of transforming the experience of owning life insurance for our customers. We announced a strategic collaboration with Amazon which adds the Halo wellness band to the devices supported by John Hancock's Vitality Program. In Global WAM, we continued to earn top scores on the United Nations-supported Principles for Responsible Investment ("PRI") annual assessment report for integrating environmental, social, and governance ("ESG") considerations into our investment practices across a range of asset classes.¹ In addition, Manulife Investment Management was also recognized in the PRI Leaders' Group 2020, a 10-year initiative honouring signatories at the cutting edge of responsible investment. This year, 36 signatories, including Manulife Investment Management, were recognized for demonstrating responsible investment excellence in climate reporting throughout their organizations and portfolios. Finally, in Canada we accelerated our Retail wealth digital transformation by launching several online tools and automations that make account maintenance, accessing forms and statements easier for advisors to service their customers.

¹ A+ awarded for strategy and governance, listed equity incorporation, and fixed-income Sovereign, Supranational, and Agency modules.

B PERFORMANCE BY SEGMENT

B1 Asia

(\$ millions, unless otherwise stated) <i>Canadian dollars</i>	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Net income attributed to shareholders ⁽¹⁾	\$ 651	\$ 377	\$ 128	\$ 1,123	\$ 1,299
Core earnings ⁽¹⁾	559	489	520	1,539	1,511
Annualized premium equivalent sales	1,005	784	1,052	2,873	3,303
New business value	365	298	430	1,019	1,205
Revenue	7,161	8,511	7,105	20,149	22,552
Revenue before realized and unrealized investment gains and losses ⁽²⁾	6,353	5,391	6,295	18,583	17,963
Assets under management (\$ billions)	134.5	132.1	118.8	134.5	118.8
<i>U.S. dollars</i>					
Net income attributed to shareholders ⁽¹⁾	US\$ 489	US\$ 272	US\$ 97	US\$ 832	US\$ 976
Core earnings ⁽¹⁾	420	353	394	1,138	1,137
Annualized premium equivalent sales	755	567	796	2,128	2,486
New business value	274	215	326	754	907
Revenue	5,378	6,145	5,379	14,852	16,970
Revenue before realized and unrealized investment gains and losses ⁽²⁾	4,770	3,893	4,766	13,749	13,520
Assets under management (\$ billions)	100.8	96.9	89.7	100.8	89.7

⁽¹⁾ See "Performance and non-GAAP measures" for a reconciliation between net income (loss) attributed to shareholders and core earnings.

⁽²⁾ See section A6 "Impact of fair value accounting".

Asia's net income attributed to shareholders was \$651 million in 3Q20 compared with \$128 million in 3Q19. Net income attributed to shareholders is comprised of core earnings, which was \$559 million in 3Q20 compared with \$520 million in 3Q19, and items excluded from core earnings, which amounted to a net gain of \$92 million in 3Q20 compared with a net charge of \$392 million in 3Q19. The changes in net income attributed to shareholders and core earnings expressed in Canadian dollars are due to the factors described below and, in addition, core earnings reflected a net \$9 million favourable impact due to changes in foreign currency exchange rates versus the Canadian dollar.

Expressed in U.S. dollars, the presentation currency of the segment, net income attributed to shareholders was US\$489 million in 3Q20 compared with US\$97 million in 3Q19 and core earnings were US\$420 million in 3Q20 compared with US\$394 million in 3Q19. Items excluded from core earnings were a net gain of US\$69 million in 3Q20 compared with a net charge of US\$297 million in 3Q19 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in "Performance and non-GAAP measures" below).

Core earnings in 3Q20 increased 6% compared with 3Q19. This was driven by in-force business growth across Asia, and favourable new business product mix in Hong Kong and Asia Other, partially offset by unfavourable new business product mix in Japan and the non-recurrence of management actions in 3Q19.

Year-to-date net income attributed to shareholders was US\$832 million in 2020 compared with US\$976 million in the same period of 2019. Year-to-date core earnings of US\$1,138 million in 2020 were consistent with the same period of 2019 as in-force business growth, favourable new business product mix in Hong Kong and Asia Other, and improved policyholder experience across Asia were offset by lower new business volumes in Japan and the non-recurrence of management actions in 3Q19. Items excluded from year-to-date core earnings were a net charge of US\$306 million in 2020 compared with a net charge of US\$161 million for the same period of 2019 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in "Performance and non-GAAP measures" below). Expressed in Canadian dollars, year-to-date core earnings reflected a net \$30 million favourable impact of changes in foreign currency exchange rates versus the Canadian dollar.

APE sales in 3Q20 were US\$755 million, a decrease of 6% compared with 3Q19 as growth in Japan and Asia Other was more than offset by lower sales in Hong Kong. NBV in 3Q20 was US\$274 million, a 16% decrease compared with 3Q19 mainly driven by the decrease in APE sales. Both APE sales and NBV improved compared with 2Q20, increasing 31% and 26%, respectively, following the relaxation of some COVID-19 containment measures in certain markets in Asia in the latter part of 2Q20. Year-to-date APE sales were US\$2,128 million in 2020, a decrease of 14% compared with the same period of 2019 due to the adverse impact of COVID-19, lower VHIS and QDAP sales in Hong Kong and accelerated sales of COLI products in Japan in the first quarter of 2019 ("1Q19") in anticipation of a change in tax regulations. Year-to-date NBV was US\$754 million in 2020, a 17%

decrease compared with the same period of 2019, reflecting the impact of lower sales and lower interest rates partially offset by favourable business mix. New business value margin (“NBV margin”)¹ was 38.7% in 3Q20 compared with 43.2% in 3Q19.

- Japan APE sales in 3Q20 were US\$159 million, an increase of 9% compared with 3Q19 driven by an increase in COLI sales, partially offset by the adverse impact of COVID-19. Japan NBV in 3Q20 of US\$31 million decreased 40% compared with 3Q19 due to higher COLI mix. Japan NBV margin was 19.9% in 3Q20, a decrease of 16.1 percentage points compared with 3Q19.
- Hong Kong APE sales in 3Q20 were US\$197 million, a 26% decrease compared with 3Q19. The decrease in sales was driven by the tightening of COVID-19 containment measures during the quarter, a decrease in sales to mainland Chinese visitors as well as strong prior year quarter sales of our VHIS and QDAP products. Hong Kong NBV in 3Q20 of US\$111 million decreased 35% compared with 3Q19 as a result of lower sales and a decline in interest rates. Hong Kong NBV margin was 56.0% in 3Q20, a decrease of 7.7 percentage points compared with 3Q19.
- Asia Other APE sales in 3Q20 were US\$399 million, a 3% increase compared with 3Q19. Higher sales in agency were offset by lower sales in bancassurance due to restricted activities in bank branches and temporary bank closures. Asia Other NBV in 3Q20 of US\$132 million increased 27% compared with 3Q19, primarily as a result of higher sales, management actions and a favourable product mix, partially offset by a decline in market interest rates. Asia Other NBV margin was 37.5% in 3Q20, an increase of 7.3 percentage points compared with 3Q19.

Revenue was US\$5.4 billion in 3Q20 and 3Q19. Revenue before realized and unrealized investment gains and losses was US\$4.8 billion in 3Q20 and 3Q19. Year-to-date revenue was US\$14.9 billion in 2020 compared with US\$17.0 billion in the same period of 2019. Year-to-date revenue before realized and unrealized investment gains and losses was US\$13.8 billion in 2020, compared with US\$13.5 billion in the same period of 2019.

Assets under management¹ were US\$100.8 billion as at September 30, 2020, an increase of US\$7.3 billion or 7% compared with December 31, 2019, due to net customer inflows of US\$7.1 billion.

Business highlights - In 3Q20, we sold our first policy in Myanmar, a digitally savvy market with one of the lowest insurance penetration rates in Asia. In Vietnam, we entered into a partnership with Cong Dong Bau, a community with more than 5 million members that improves access to financial advice and solutions for expectant and new mothers.

B2 Canada

(\$ millions, unless otherwise stated)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Net income (loss) attributed to shareholders ⁽¹⁾	\$ 291	\$ 142	\$ (172)	\$ (433)	\$ 896
Core earnings ⁽¹⁾	279	342	318	858	913
Annualized premium equivalent sales	289	238	235	903	786
Manulife Bank average net lending assets (\$ billions)	22.7	22.5	22.0	22.5	21.8
Revenue	3,313	7,934	4,524	14,632	17,366
Revenue before realized and unrealized investment income gains and losses ⁽²⁾	3,553	3,404	3,550	10,032	10,925
Assets under management (\$ billions)	157.5	156.4	152.2	157.5	152.2

⁽¹⁾ See “Performance and non-GAAP measures” below for a reconciliation between net income (loss) attributed to shareholders and core earnings.

⁽²⁾ See section A6 “Impact of fair value accounting”.

Canada’s 3Q20 net income attributed to shareholders was \$291 million compared with a net loss attributed to shareholders of \$172 million in 3Q19. Net income attributed to shareholders is comprised of core earnings, which were \$279 million in 3Q20 compared with \$318 million in 3Q19, and items excluded from core earnings, which amounted to a net gain of \$12 million in 3Q20 compared with a net charge of \$490 million in 3Q19 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in “Performance and non-GAAP measures” below).

Core earnings decreased \$39 million or 12% compared with 3Q19, primarily reflecting unfavourable policyholder experience in our insurance businesses and a number of smaller experience-related items.

Year-to-date net loss attributed to shareholders was \$433 million in 2020 compared with a year-to-date net income attributed to shareholders of \$896 million in the same period of 2019 and year-to-date core earnings were \$858 million in 2020 compared with \$913 million in the same period of 2019. The decrease in year-to-date core earnings of \$55 million was driven by the unfavourable impact of lower individual insurance sales, the non-recurrence of gains from the second phase of our segregated fund transfer program in 3Q19 and a number of smaller experience-related items, partially offset by favourable policyholder

¹ This item is a non-GAAP measure. See “Performance and non-GAAP measures” below.

experience. Items excluded from year-to-date core earnings were a net charge of \$1,291 million in 2020 compared with a net charge of \$17 million for the same period of 2019 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in “Performance and non-GAAP measures” below).

APE sales of \$289 million in 3Q20 increased by \$54 million or 23% compared with 3Q19, primarily driven by higher large-case group insurance sales, partially offset by lower individual insurance sales due to the adverse impact of COVID-19. Year-to-date APE sales in 2020 were \$903 million, \$117 million or 15% higher than in the same period of 2019, driven by large-case group insurance sales, affinity market sales and higher sales of lower risk segregated fund products, partially offset by lower retail individual insurance sales.

- Individual insurance APE sales in 3Q20 of \$82 million decreased \$24 million or 23% compared with 3Q19, with lower sales due to the impact of COVID-19.
- Group insurance APE sales in 3Q20 of \$154 million increased \$74 million or 93% compared with 3Q19, due to higher large-case sales.
- Annuities APE sales in 3Q20 of \$53 million increased \$4 million or 8% compared with 3Q19, due to higher sales in our lower risk segregated funds. We are focused on growth in lower risk segregated fund products, which in 3Q20 accounted for 85% of annuities APE sales.

Manulife Bank average net lending assets for the quarter were \$22.7 billion as at September 30, 2020, up \$0.6 billion or 3% from the fourth quarter of 2019 average.

Revenue in 3Q20 was \$3.3 billion compared with \$4.5 billion in 3Q19. Revenue before realized and unrealized investment gains and losses of \$3.6 billion in 3Q20 was in line with 3Q19. Year-to-date revenue was \$14.6 billion in 2020 compared with \$17.4 billion in the same period of 2019. Year-to-date revenue before realized and unrealized investment gains and losses was \$10.0 billion in 2020, a decrease of 8% compared with the same period of 2019 due to lower investment income as a result of sharp declines in oil and gas prices in the first quarter of 2020 (“1Q20”).

Assets under management were \$157.5 billion as at September 30, 2020, an increase of \$6.3 billion or 4% from December 31, 2019, due to the impact of lower interest rates.

Business highlights - In 3Q20, we continued to take actions to protect the health and well-being of our customers during the global pandemic. We launched our new travel insurance product that covers emergency medical costs and trip interruption expenses from COVID-19 and related conditions. We also released a new Return to Work Playbook incorporating health and safety as well as mental health guidance to support our Group Benefits clients as they return to their workplace. We further enhanced our Group Benefits product offering with the introduction of Health by Design, a proactive approach using the latest science, technology and predictive analytics to help each member with their unique health journey.

B3 U.S.

(\$ millions, unless otherwise stated) <i>Canadian dollars</i>	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Net income attributed to shareholders ⁽¹⁾	\$ 891	\$ (1,580)	\$ 342	\$ 1,163	\$ 1,285
Core earnings ⁽¹⁾	498	602	471	1,516	1,387
Annualized premium equivalent sales	136	154	156	431	453
Revenue	1,398	7,604	9,146	19,665	23,439
Revenue before realized and unrealized investment income gains and losses ⁽²⁾	883	3,585	4,364	8,518	11,839
Assets under management (\$ billions)	244.6	248.5	233.8	244.6	233.8
<i>U.S. dollars</i>					
Net income attributed to shareholders ⁽¹⁾	US\$ 669	US\$ (1,140)	US\$ 258	US\$ 906	US\$ 965
Core earnings ⁽¹⁾	374	434	357	1,118	1,043
Annualized premium equivalent sales	102	111	118	318	341
Revenue	1,050	5,488	6,927	14,467	17,640
Revenue before realized and unrealized investment income gains and losses ⁽²⁾	664	2,586	3,305	6,262	8,907
Assets under management (\$ billions)	183.4	182.3	176.6	183.4	176.6

⁽¹⁾ See “Performance and non-GAAP measures” below for a reconciliation between net income (loss) attributed to shareholders and core earnings.

⁽²⁾ See section A6 “Impact of fair value accounting”.

U.S. 3Q20 net income attributed to shareholders was \$891 million compared with \$342 million in 3Q19. Net income attributed to shareholders is comprised of core earnings, which amounted to \$498 million in 3Q20 compared with \$471 million in 3Q19, and items excluded from core earnings, which amounted to a net gain of \$393 million in 3Q20 compared with a net charge of \$129 million in 3Q19. The changes in net income attributed to shareholders and core earnings expressed in Canadian dollars are due to the factors described below and, in addition, the change in core earnings reflected a net \$4 million favourable currency impact from the strengthening of the U.S. dollar compared with the Canadian dollar.

Expressed in U.S. dollars, the functional currency of the segment, 3Q20 net income attributed to shareholders was US\$669 million compared with US\$258 million in 3Q19, core earnings were US\$374 million in 3Q20 compared with US\$357 million in 3Q19, and items excluded from core earnings were a net gain of US\$295 million in 3Q20 compared with a net charge of US\$99 million in 3Q19 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in "Performance and non-GAAP measures" below).

Core earnings increased US\$17 million or 5% compared with 3Q19 primarily driven by higher in-force earnings and a focus on reduced spending in the current economic environment. These were partially offset by the non-recurrence of a favourable true-up of prior year tax accruals in 3Q19. Insurance policyholder experience was flat compared with the prior year, as unfavourable life insurance experience, which included modest COVID-19 related claim losses was partially offset by favourable long-term care experience resulting from claim terminations due to the impact of COVID-19.

Year-to-date net income attributed to shareholders was US\$906 million in 2020 compared with US\$965 million in the same period of 2019 and year-to-date core earnings were US\$1,118 million in 2020 compared with US\$1,043 million in the same period of 2019. Year-to-date core earnings increased US\$75 million due to the factors noted above, along with a net favourable year-to-date policyholder experience. Policyholder experience improved compared with the same period of 2019, with favourable long-term care claim terminations due to the impact of COVID-19, partially offset by unfavourable life insurance policyholder experience, including COVID-19 related claims. Items excluded from year-to-date core earnings were a net charge of US\$212 million in 2020 compared with a net charge of US\$78 million for the same period of 2019 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in "Performance and non-GAAP measures" below). Expressed in Canadian dollars, year-to-date core earnings reflected a \$30 million favourable impact of changes in foreign currency exchange rates versus the Canadian dollar.

APE sales in 3Q20 of US\$102 million declined 14% compared with 3Q19, as lower international universal life, domestic protection universal life, and variable universal life sales were partially offset by higher domestic indexed universal life and term life sales. The John Hancock Vitality PLUS feature continues to be a key differentiator in the market as 3Q20 APE sales were consistent with record APE sales in 3Q19. Year-to-date APE sales in 2020 of US\$318 million declined 7% compared with the same period of 2019 primarily due to similar factors as noted above. The decline in 3Q20 and year-to-date 2020 APE sales compared to the same periods in the prior year reflects the impact of COVID-19.

Revenue in 3Q20 was US\$1.1 billion compared with US\$6.9 billion in 3Q19. Revenue before net realized and unrealized investment gains and losses was US\$0.7 billion in 3Q20 compared with US\$3.3 billion in 3Q19. The US\$2.6 billion decrease was driven by the net impact of the reinsurance of a block of our legacy U.S. BOLI business in 3Q20. Year-to-date revenue was US\$14.5 billion in 2020, a decrease compared with US\$17.6 billion in the same period of 2019. Year-to-date revenue before realized and unrealized investment gains and losses was US\$6.3 billion in 2020 compared with US\$8.9 billion in the same period of 2019. The US\$2.6 billion decrease was driven by the above-noted reinsurance transaction and lower investment income, partially offset by the impact of a one-time ceded premium in 1Q19 from the reinsurance of legacy annuity business.

Assets under management as at September 30, 2020 were US\$183.4 billion, an increase of 3% from December 31, 2019. The increase was driven by favourable mark-to-market movement on assets supporting our insurance business resulting from lower interest rates partially offset by the continued run-off of the annuity business and the above-noted reinsurance of a block of our legacy BOLI business in 3Q20.

Business highlights - In 3Q20, continued to make progress on our objective of transforming the experience of owning life insurance for our customers. We announced a strategic collaboration with Amazon, which adds the Halo wellness band to the devices supported by John Hancock's Vitality Program. We also reinsured a block of our legacy U.S. BOLI business that generated the release of US\$340 million of capital. In addition, we launched a savings plan product for international customers, designed to complement our already competitive international suite of products.

B4 Global Wealth and Asset Management

(\$ millions, unless otherwise stated)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Net income attributed to shareholders ⁽¹⁾	\$ 308	\$ 238	\$ 281	\$ 796	\$ 757
Core earnings ⁽¹⁾	308	238	281	796	756
Core EBITDA ⁽²⁾	446	381	404	1,217	1,145
Core EBITDA margin ⁽²⁾ (%)	30.4%	28.0%	28.7%	28.6%	27.5%
Sales					
Wealth and asset management gross flows	27,475	33,071	27,968	98,718	81,318
Wealth and asset management net flows	(2,219)	5,149	(4,410)	6,088	(5,767)
Revenue	1,465	1,361	1,409	4,252	4,162
Assets under management and administration (\$ billions)	715.4	696.9	659.2	715.4	659.2
Average assets under management and administration (\$ billions) ⁽³⁾	707.9	672.0	655.6	686.4	645.4

⁽¹⁾ See "Performance and non-GAAP measures" below for a reconciliation between net income (loss) attributed to shareholders and core earnings.

⁽²⁾ Core EBITDA and core EBITDA margin are non-GAAP measures. Core EBITDA is core earnings before interest, taxes, depreciation and amortization and core EBITDA margin is core EBITDA divided by total revenue. See "Performance and non-GAAP measures" below.

⁽³⁾ Average assets under management and administration ("average AUMA") is a non-GAAP measure reflecting the average of Global WAM's AUMA during the reporting period. See "Performance and non-GAAP measures" below.

Global Wealth and Asset Management's net income attributed to shareholders was \$308 million in 3Q20 compared with \$281 million in 3Q19. Net income attributed to shareholders is comprised of core earnings, which were \$308 million in 3Q20 compared with \$281 million in 3Q19 and items excluded from core earnings, which were nil in 3Q20 and 3Q19 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in "Performance and non-GAAP measures" below).

Core earnings in 3Q20 increased 9% compared with 3Q19 driven primarily by higher average assets under management and administration, partially offset by unfavourable impacts from changes in product mix and lower fee spread in the U.S. Retirement business, and lower tax benefits.

Core EBITDA¹ was \$446 million in 3Q20, an increase of 10% compared with 3Q19, driven by higher net fee income. Core EBITDA margin¹ was 30.4% in 3Q20, an increase of 170 basis points compared with 3Q19, reflecting our scale and commitment to expense efficiency.

Year-to-date net income attributed to shareholders was \$796 million in 2020 compared with \$757 million in the same period of 2019 and year-to-date core earnings were \$796 million in 2020 compared with \$756 million in the same period of 2019. The increase in year-to-date core earnings of \$40 million or 4% was driven by the same factors as noted above, as well as lower expenses from ongoing efficiency initiatives. Items excluded from year-to-date core earnings were nil in 2020 compared with a net gain of \$1 million for the same period of 2019 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in "Performance and non-GAAP measures" below).

Year-to-date core EBITDA was \$1,217 million in 2020 compared with \$1,145 million in the same period of 2019. The increase in year-to-date core EBITDA of \$72 million or 5% was driven by higher net fee income and expense reductions. Year-to-date core EBITDA margin was 28.6% in 2020 compared with 27.5% in the same period of 2019. The increase of 110 basis points was driven by the factors as noted above for the quarter.

Gross flows¹ and net flows - Gross flows were \$27.5 billion in 3Q20, a decrease of 2% compared with 3Q19, and net outflows were \$2.2 billion in 3Q20, compared with net outflows of \$4.4 billion in 3Q19. Year-to-date gross flows in 2020 of \$98.7 billion were 20% higher than the same period of 2019, and year-to-date net inflows were \$6.1 billion in 2020 compared with net outflows of \$5.8 billion for the same period of 2019. By geography, the results were:

WAM Asia:

- Gross flows in Asia in 3Q20 were \$6.2 billion, an increase of \$0.5 billion or 8% compared with 3Q19, driven by higher gross flows across all business lines. Growth was driven by higher retail gross flows in Indonesia, an institutional fixed income product launch in mainland China and higher retirement gross flows in Indonesia and Hong Kong. Year-to-date gross flows in 2020 of \$16.5 billion were 8% higher than the same period of 2019.
- Net inflows in Asia in 3Q20 were \$1.1 billion, compared with net inflows of \$2.3 billion in 3Q19, driven by higher retail redemptions in mainland China. This was partially offset by higher gross flows as mentioned above. Year-to-date net

¹ This item is a non-GAAP measure. See "Performance and non-GAAP measures" below.

inflows were \$1.7 billion in 2020 compared with net inflows of \$4.6 billion in the same period of 2019.

WAM Canada:

- Gross flows in Canada in 3Q20 were \$4.8 billion, a decrease of \$1.2 billion or 19% compared with 3Q19, driven by lower gross flows into fixed income mandates in Institutional Asset Management. This was partially offset by higher new plan sales and recurring deposits growth in Retirement. Year-to-date gross flows in 2020 of \$24.4 billion were 38% higher than the same period of 2019.
- Net inflows in Canada were \$1.2 billion in 3Q20 compared with net outflows of \$6.9 billion in 3Q19, driven by the non-recurrence of an \$8.5 billion redemption in Institutional Asset Management in 3Q19 and lower redemptions in Retirement. This was partially offset by lower gross flows as mentioned above. Year-to-date net inflows were \$12.4 billion in 2020 compared with net outflows of \$4.7 billion in the same period of 2019.

WAM U.S.:

- Gross flows in the U.S. in 3Q20 were \$16.4 billion, in line with 3Q19, as higher gross flows into global equity and fixed income products in Retail and higher gross flows in Institutional Asset Management offset lower new plan sales and recurring deposits in Retirement. Year-to-date gross flows in 2020 of \$57.8 billion were 17% higher than the same period of 2019.
- Net outflows in the U.S. were \$4.5 billion in 3Q20 compared with net inflows of \$0.1 billion in 3Q19, driven by the redemption of an equity mandate in Institutional Asset Management of \$5.0 billion and higher member withdrawals in Retirement. Year-to-date net outflows were \$8.0 billion in 2020 compared with net outflows of \$5.7 billion in the same period of 2019.

Revenue in 3Q20 was \$1.5 billion, an increase of 3% compared with 3Q19, driven by higher average assets under management and administration, partially offset by changes in product mix and lower fee spread in the U.S. Retirement business. Year-to-date revenue in 2020 was \$4.3 billion, an increase of 1% compared with the same period of 2019 driven by the same factors as noted above.

Assets under management and administration of \$715.4 billion as at September 30, 2020 increased 3% compared with December 31, 2019. The increase in AUMA was driven by the favourable impact of markets and year-to-date net inflows of \$6.1 billion. Global WAM also manages \$207.9 billion in assets for the Company's non-WAM reporting segments. Including those managed assets, AUMA managed by Global WAM was \$923.2 billion as at September 30, 2020 compared with \$879.2 billion as at December 31, 2019.

Business highlights - In 3Q20, we continued to earn top scores from the United Nations-supported Principles for Responsible Investment ("PRI") annual assessment report for integrating environmental, social, and governance ("ESG") considerations into our investment practices across a range of asset classes.¹ In addition, Manulife Investment Management was also recognized in the PRI Leaders' Group 2020, a 10-year initiative honouring signatories at the cutting edge of responsible investment. This year, 36 signatories, including Manulife Investment Management, were recognized for demonstrating responsible investment excellence in climate reporting throughout their organizations and portfolios. Finally, in Canada we accelerated our Retail wealth digital transformation by launching several online tools and automations that make account maintenance, accessing forms and statements easier for advisors to service their customers.

B5 Corporate and Other

(\$ millions, unless otherwise stated)	Quarterly Results			YTD Results	
	3Q20	2Q20	3Q19	2020	2019
Net income (loss) attributed to shareholders ⁽¹⁾	\$ (73)	\$ 1,550	\$ 144	\$ 1,442	\$ 137
Core loss excluding core investment gains ⁽¹⁾	\$ (191)	\$ (110)	\$ (163)	\$ (667)	\$ (340)
Core investment gains	-	-	100	-	300
Total core gain (loss)	\$ (191)	\$ (110)	\$ (63)	\$ (667)	\$ (40)
Revenue	\$ 39	\$ 2,076	\$ 445	\$ 2,341	\$ 879

⁽¹⁾ See "Performance and non-GAAP measures" for a reconciliation between net income (loss) attributed to shareholders and core earnings.

Corporate and Other is composed of investment performance on assets backing capital, net of amounts allocated to operating segments; financing costs; costs incurred by the corporate office related to shareholder activities (not allocated to the operating segments); our Property and Casualty ("P&C") Reinsurance business; as well as run-off reinsurance operations including variable annuities and accident and health.

¹ A+ awarded for strategy and governance, listed equity incorporation, and fixed-income Sovereign, Supranational, and Agency modules.

For segment reporting purposes, settlement costs for macro equity hedges and other non-operating items are included in Corporate and Other earnings. This segment is also where we reclassify favourable investment-related experience to core earnings from items excluded from core earnings, subject to certain limits (see “Performance and non-GAAP measures” below). In each of the operating segments, we report all investment-related experience in items excluded from core earnings.

Corporate and Other reported a net loss attributed to shareholders of \$73 million in 3Q20 compared with net income attributed to shareholders of \$144 million in 3Q19. The core loss was \$191 million in 3Q20 compared with a core loss of \$63 million in 3Q19 and the items excluded from core loss amounted to a net gain of \$118 million in 3Q20 compared with a net gain of \$207 million in 3Q19 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in “Performance and non-GAAP measures” below).

The \$128 million increase in core loss was primarily related to nil core investment gains in 3Q20 compared with \$100 million in 3Q19 and lower investment income due to lower yield and asset mix. The net impact of markets on seed money investments in segregated funds and mutual funds and sales of AFS equities was consistent with the prior year.

The items excluded from core loss amounted to a net gain of \$118 million in 3Q20 and were primarily due to the gains from the sale of AFS bonds and the favourable impact of changes in actuarial methods and assumptions.

On a year-to-date basis, net income attributed to shareholders was \$1,442 million in 2020 compared with \$137 million in the same period of 2019. The year-to-date core loss was \$667 million in 2020 compared with \$40 million in the same period of 2019. The unfavourable variance in the year-to-date core loss of \$627 million was primarily attributable to nil core investment gains in the first 9 months of 2020 compared with \$300 million in the same period of 2019, the less favourable impact of markets on seed money investments in segregated funds and mutual funds, net losses on AFS equities in 2020 compared to net gains in 2019 and lower investment income. Items excluded from the year-to-date core loss were a net gain of \$2,109 million in 2020 compared with a net gain of \$177 million in the same period of 2019 (see a reconciliation of net income (loss) attributed to shareholders to core earnings in “Performance and non-GAAP measures” below).

Revenue in 3Q20 was \$39 million compared with \$445 million in 3Q19. The variance was primarily driven by lower realized gains on the sale of AFS bonds and lower investment income. Year-to-date revenue was \$2,341 million in 2020 compared with \$879 million in the same period of 2019. The favourable variance was largely due to realized gains on the sale of AFS bonds.

C RISK MANAGEMENT AND RISK FACTORS UPDATE

This section provides an update to our risk management practices and risk factors outlined in the MD&A in our 2019 Annual Report (“2019 MD&A”). The shaded text and tables in this section of the MD&A represent our disclosure on market and liquidity risk in accordance with IFRS 7 “Financial Instruments – Disclosures”. Accordingly, the following shaded text and tables represent an integral part of our unaudited Interim Consolidated Financial Statements.

C1 Variable annuity and segregated fund guarantees

As described in the MD&A in our 2019 Annual Report, guarantees on variable annuity products and segregated funds may include one or more of death, maturity, income and withdrawal guarantees. Variable annuity and segregated fund guarantees are contingent on 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 2020 to 2040.

We seek to mitigate a portion of the risks embedded in our retained (i.e. net of reinsurance) variable annuity and segregated fund guarantee business through the combination of our dynamic and macro hedging strategies (see section C3 “Publicly traded equity performance risk” below).

The table below shows selected information regarding the Company's variable annuity and segregated fund investment-related guarantees gross and net of reinsurance.

Variable annuity and segregated fund guarantees, net of reinsurance

As at (\$ millions)	September 30, 2020			December 31, 2019		
	Guarantee value	Fund value	Amount at risk ^{(3),(4)}	Guarantee value	Fund value	Amount at risk ^{(3),(4)}
Guaranteed minimum income benefit	\$ 4,525	\$ 3,499	\$ 1,109	\$ 4,629	\$ 3,696	\$ 998
Guaranteed minimum withdrawal benefit	51,702	44,300	7,787	53,355	48,031	6,030
Guaranteed minimum accumulation benefit	18,381	18,770	22	17,994	18,362	10
Gross living benefits ⁽¹⁾	74,608	66,569	8,918	75,978	70,089	7,038
Gross death benefits ⁽²⁾	9,391	17,520	829	9,555	17,186	802
Total gross of reinsurance	83,999	84,089	9,747	85,533	87,275	7,840
Living benefits reinsured	3,877	3,022	923	3,977	3,199	832
Death benefits reinsured	718	538	302	718	500	318
Total reinsured	4,595	3,560	1,225	4,695	3,699	1,150
Total, net of reinsurance	\$ 79,404	\$ 80,529	\$ 8,522	\$ 80,838	\$ 83,576	\$ 6,690

⁽¹⁾ 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 2.

⁽²⁾ Death benefits include standalone guarantees and guarantees in excess of living benefit guarantees where both death and living benefits are provided on a policy.

⁽³⁾ Amount at risk (in-the-money amount) is the excess of guarantee values over fund values on all policies where the guarantee value exceeds the fund value. This amount is not currently payable. For guaranteed minimum death benefit, the amount at risk is defined as the current guaranteed minimum death benefit in excess of the current account balance. For guaranteed minimum income benefit, the amount at risk is defined as the excess of the current annuitization income base over the current account value. For all guarantees, the amount at risk is floored at zero at the single contract level.

⁽⁴⁾ The amount at risk net of reinsurance at September 30, 2020 was \$8,522 million (December 31, 2019 – \$6,690 million) of which: US\$5,336 million (December 31, 2019 – US\$3,995 million) was on our U.S. business, \$1,084 million (December 31, 2019 – \$1,178 million) was on our Canadian business, US\$104 million (December 31, 2019 – US\$104 million) was on our Japan business and US\$136 million (December 31, 2019 – US\$145 million) was related to Asia (other than Japan) and our run-off reinsurance business.

C2 Caution related to sensitivities

In this document, we provide sensitivities and risk exposure measures for certain risks. These include sensitivities due to specific changes in market prices and interest rate levels projected using internal models as at a specific date, and are measured relative to a starting level reflecting the Company's assets and liabilities at that date and the actuarial factors, investment activity and investment returns assumed in the determination of policy liabilities. The risk exposures measure the impact of changing one factor at a time and assume that all other factors remain unchanged. Actual results can differ significantly from these estimates for a variety of reasons including the interaction among these factors when more than one changes; changes in actuarial and investment return and future investment activity assumptions; actual experience differing from the assumptions, changes in business mix, effective tax rates and other market factors; and the general limitations of our internal models. For these reasons, the sensitivities should only be viewed as directional estimates of the underlying sensitivities for the respective factors based on the assumptions outlined below. Given the nature of these calculations, we cannot provide assurance that the actual impact on net income attributed to shareholders or on MLI's LICAT total ratio will be as indicated. Market movements affect LICAT capital sensitivities both through income and other components of the regulatory capital framework. For example, LICAT is affected by changes to other comprehensive income.

C3 Publicly traded equity performance risk

As outlined in our 2019 Annual Report, we have net exposure to equity risk through asset and liability mismatches; 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 macro hedging strategy is designed to mitigate public equity risk arising from variable annuity guarantees not dynamically hedged and from other unhedged exposures in our insurance liabilities (see pages 44 and 45 of our 2019 Annual Report).

Changes in equity prices may impact other items including, but not limited to, asset-based fees earned on assets under management and administration or policyholder account value, and estimated profits and amortization of deferred policy acquisition and other costs. These items are not hedged.

The table below shows the potential impact on net income attributed to shareholders resulting from an immediate 10%, 20% and 30% change in market values of publicly traded equities followed by a return to the expected level of growth assumed in the valuation of policy liabilities. If market values were to remain flat for an entire year, the potential impact would be roughly equivalent to an immediate decline in market values equal to the expected level of annual growth assumed in the valuation of policy liabilities. Further, if after market values dropped 10%, 20% or 30% they continued to decline, remained flat, or grew more slowly than assumed in the valuation the potential impact on net income attributed to shareholders could be considerably

more than shown. Refer to section D3 “Sensitivity of policy liabilities to asset related assumptions” for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions. The potential impact is shown after taking into account the impact of the change in markets on the hedge assets. While we cannot reliably estimate the amount of the change in dynamically hedged variable annuity guarantee liabilities that will not be offset by the profit or loss on the dynamic hedge assets, we make certain assumptions for the purposes of estimating the impact on net income attributed to shareholders.

This estimate assumes that the performance of the dynamic hedging program would not completely offset the gain/loss from the dynamically hedged variable annuity guarantee liabilities. It assumes that the hedge assets are based on the actual position at the period end, and that equity hedges in the dynamic program are rebalanced at 5% intervals. In addition, we assume that the macro hedge assets are rebalanced in line with market changes.

It is also important to note that these estimates are illustrative, and that the dynamic and macro hedging programs may underperform these estimates, particularly during periods of high realized volatility and/or periods where both interest rates and equity market movements are unfavourable.

The Standards of Practice for the valuation of insurance contract liabilities and guidance published by the CIA constrain the investment return assumptions for public equities and certain ALDA assets based on historical return benchmarks for public equities. The potential impact on net income attributed to shareholders does not consider possible changes to investment return assumptions resulting from the impact of declines in public equity market values on these historical return benchmarks.

Potential immediate impact on net income attributed to shareholders arising from changes to public equity returns^{(1),(2),(3)}

As at September 30, 2020 (\$ millions)	-30%	-20%	-10%	+10%	+20%	+30%
Underlying sensitivity to net income attributed to shareholders⁽⁴⁾						
Variable annuity guarantees	\$ (3,340)	\$ (2,020)	\$ (910)	\$ 710	\$ 1,250	\$ 1,660
General fund equity investments ⁽⁵⁾	(1,400)	(890)	(400)	370	730	1,080
Total underlying sensitivity before hedging	(4,740)	(2,910)	(1,310)	1,080	1,980	2,740
Impact of macro and dynamic hedge assets ⁽⁶⁾	2,590	1,580	700	(690)	(1,240)	(1,670)
Net potential impact on net income attributed to shareholders after impact of hedging	\$ (2,150)	\$ (1,330)	\$ (610)	\$ 390	\$ 740	\$ 1,070
As at December 31, 2019						
(\$ millions)	-30%	-20%	-10%	+10%	+20%	+30%
Underlying sensitivity to net income attributed to shareholders⁽⁴⁾						
Variable annuity guarantees	\$ (3,270)	\$ (1,930)	\$ (860)	\$ 620	\$ 1,060	\$ 1,360
General fund equity investments ⁽⁵⁾	(1,140)	(720)	(330)	340	680	1,020
Total underlying sensitivity before hedging	(4,410)	(2,650)	(1,190)	960	1,740	2,380
Impact of macro and dynamic hedge assets ⁽⁶⁾	2,690	1,580	670	(580)	(1,020)	(1,340)
Net potential impact on net income attributed to shareholders after impact of hedging	\$ (1,720)	\$ (1,070)	\$ (520)	\$ 380	\$ 720	\$ 1,040

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

⁽²⁾ The tables above show the potential impact on net income attributed to shareholders resulting from an immediate 10%, 20% and 30% change in market values of publicly traded equities followed by a return to the expected level of growth assumed in the valuation of policy liabilities, excluding impacts from asset-based fees earned on assets under management and policyholder account value.

⁽³⁾ Please refer to section D3 “Sensitivity of policy liabilities to asset related assumptions” for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions.

⁽⁴⁾ Defined as earnings sensitivity to a change in public equity markets including settlements on reinsurance contracts, but before the offset of hedge assets or other risk mitigants.

⁽⁵⁾ This impact for general fund equity investments includes general fund investments supporting our policy liabilities, investment in seed money investments (in segregated and mutual funds made by Corporate and Other segment) and the impact on policy liabilities related to the projected future fee income on variable universal life and other unit linked products. The impact does not include: (i) any potential impact on public equity weightings; (ii) any gains or losses on AFS public equities held in the Corporate and Other segment; or (iii) any gains or losses on public equity investments held in Manulife Bank. The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in equity markets.

⁽⁶⁾ Includes the impact of rebalancing equity hedges in the macro and dynamic hedging program. The impact of dynamic hedge rebalancing represents the impact of rebalancing equity hedges for dynamically hedged variable annuity guarantee best estimate liabilities at 5% intervals, but does not include any impact in respect of other sources of hedge ineffectiveness (e.g. fund tracking, realized volatility and equity, interest rate correlations different from expected among other factors).

Changes in equity markets impact our available and required components of the LICAT total ratio. The following table shows the potential impact to MLI's LICAT total ratio resulting from changes in public equity market values.

Potential immediate impact on MLI's LICAT total ratio arising from public equity returns different than the expected return for policy liability valuation^{(1),(2),(3)}

Percentage points	Impact on MLI's LICAT total ratio					
	-30%	-20%	-10%	+10%	+20%	+30%
September 30, 2020	(4)	(2)	(1)	-	1	-
December 31, 2019	(5)	(3)	(1)	1	4	5

(1) See "Caution related to sensitivities" above. In addition, estimates exclude changes to the net actuarial gains/losses with respect to the Company's pension obligations as a result of changes in equity markets, as the impact on the quoted sensitivities is not considered to be material.

(2) The potential impact is shown assuming that the change in value of the hedge assets does not completely offset the change in the dynamically hedged variable annuity guarantee liabilities. The estimated amount that would not be completely offset relates to our practices of not hedging the provisions for adverse deviation and of rebalancing equity hedges for dynamically hedged variable annuity liabilities at 5% intervals.

(3) The Office of the Superintendent of Financial Institutions ("OSFI") rules for segregated fund guarantees reflect full capital impacts of shocks over 20 quarters within a prescribed range. As such, the deterioration in equity markets could lead to further increases in capital requirements after the initial shock.

C4 Interest rate and spread risk sensitivities and exposure measures

As at September 30, 2020, we estimated the sensitivity of our net income attributed to shareholders to a 50 basis point parallel decline in interest rates to be neutral, and to a 50 basis point increase in interest rates to be a charge of \$200 million.

The table below shows the potential impact on net income attributed to shareholders from a 50 basis point parallel move in interest rates. This includes a change of 50 basis points in current government, swap and corporate rates for all maturities across all markets with no change in credit spreads between government, swap and corporate rates, and with a floor of zero on government rates where government rates are not currently negative, relative to the rates assumed in the valuation of policy liabilities, including embedded derivatives. For variable annuity guarantee liabilities that are dynamically hedged, it is assumed that interest rate hedges are rebalanced at 20 basis point intervals.

As the sensitivity to a 50 basis point change in interest rates includes any associated change in the applicable reinvestment scenarios, the impact of changes to interest rates for less than, or more than 50 basis points is unlikely to be linear. Furthermore, our sensitivities are not consistent across all regions in which we operate, and the impact of yield curve changes will vary depending upon the geography where the change occurs. Reinvestment assumptions used in the valuation of policy liabilities tend to amplify the negative effects of a decrease in interest rates and dampen the positive effects of interest rate increases. This is because the reinvestment assumptions used in the valuation of our insurance liabilities are based on interest rate scenarios and calibration criteria set by the Canadian Actuarial Standards Board, while our interest rate hedges are valued using current market interest rates. Therefore, in any particular quarter, changes to the reinvestment assumptions are not fully aligned to changes in current market interest rates especially when there is a significant change in the shape of the interest rate curve. As a result, the impact from non-parallel movements may be materially different from the estimated impact of parallel movements. For example, if long-term interest rates increase more than short-term interest rates (sometimes referred to as a steepening of the yield curve) in North America, the decrease in the value of our swaps may be greater than the decrease in the value of our insurance liabilities. This could result in a charge to net income attributed to shareholders in the short-term even though the rising and steepening of the yield curve, if sustained, may have a positive long-term economic impact.

The interest rate and spread risk sensitivities are determined in isolation of each other and therefore do not reflect the combined impact of changes in government rates and credit spreads between government, swap and corporate rates occurring simultaneously. As a result, the impact of the summation of each individual sensitivity may be materially different from the impact of sensitivities to simultaneous changes in interest rate and spread risk.

The potential impact on net income attributed to shareholders does not take into account any future potential changes to our ultimate reinvestment rate assumptions or calibration criteria for stochastic risk-free rates. At December 31, 2019, we estimated the sensitivity of our net income attributed to shareholders to a 10 basis point reduction in the URR in all geographies, and a corresponding change to stochastic risk-free modeling, to be a charge of \$350 million (post-tax); and note that the impact of changes to the URR are not linear. The long-term URR for risk-free rates in Canada is prescribed at 3.05% and we use the same assumption for the U.S. Our assumption for Japan is 1.6%. The ASB is currently conducting another review of the URR with any changes expected to be announced and implemented in 2021.

The potential impact on net income attributable to shareholders does not take into account other potential impacts of lower interest rate levels, for example, increased strain on the sale of new business or lower interest earned on our surplus assets. The impact also does not reflect any unrealized gains or losses on AFS fixed income assets held in our Corporate and Other 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 realize any of the unrealized gains or losses available.

The impact does not reflect any potential effect of changing interest rates to the value of our ALDA assets. Rising interest rates could negatively impact the value of our ALDA (see “Critical Actuarial and Accounting Policies – Fair Value of Invested Assets”, on page 67 of our 2019 Annual Report). More information on ALDA assets can be found under the section C5 “Alternative long-duration asset performance risk”.

Under LICAT, changes in unrealized gains or losses in our AFS bond portfolio resulting from interest rate shocks tend to dominate capital sensitivities. As a result, the reduction in interest rates improves LICAT total ratios and vice-versa.

The following table shows the potential impact on net income attributed to shareholders including the change in the market value of AFS fixed income assets held in our Corporate and Other segment, which could be realized through the sale of these assets.

Potential impact on net income attributed to shareholders and MLI’s LICAT total ratio of an immediate parallel change in interest rates relative to rates assumed in the valuation of policy liabilities^{(1),(2),(3),(4)}

As at	September 30, 2020		December 31, 2019	
	-50bp	+50bp	-50bp	+50bp
Net income attributed to shareholders (\$ millions)				
Excluding change in market value of AFS fixed income assets held in the Corporate and Other segment	\$ -	\$ (200)	\$ (100)	\$ (100)
From fair value changes in AFS fixed income assets held in the Corporate and Other segment, if realized	2,400	(2,200)	1,700	(1,600)
MLI’s LICAT total ratio (Percentage points)				
LICAT total ratio change in percentage points ⁽⁵⁾	7	(7)	4	(4)

⁽¹⁾ See “Caution related to sensitivities” above. In addition, estimates exclude changes to the net actuarial gains/losses with respect to the Company’s pension obligations as a result of changes in interest rates, as the impact on the quoted sensitivities is not considered to be material.

⁽²⁾ Includes guaranteed insurance and annuity products, including variable annuity contracts as well as adjustable benefit products where benefits are generally adjusted as interest rates and investment returns change, a portion of which have minimum credited rate guarantees. For adjustable benefit products subject to minimum rate guarantees, the sensitivities are based on the assumption that credited rates will be floored at the minimum.

⁽³⁾ The amount of gain or loss that can be realized on AFS fixed income assets held in the Corporate and Other segment will depend on the aggregate amount of unrealized gain or loss.

⁽⁴⁾ Sensitivities are based on projected asset and liability cash flows and the impact of realizing fair value changes in AFS fixed income is based on the holdings at the end of the period.

⁽⁵⁾ LICAT impacts include realized and unrealized fair value changes in AFS fixed income assets. LICAT impacts do not reflect the impact of the scenario switch discussed below.

The following tables show the potential impact on net income attributed to shareholders resulting from a change in corporate spreads and swap spreads over government bond rates for all maturities across all markets with a floor of zero on the total interest rate, relative to the spreads assumed in the valuation of policy liabilities.

Potential impact on net income attributed to shareholders and MLI’s LICAT total ratio arising from changes to corporate spreads and swap spreads^{(1),(2),(3)}

Corporate spreads ^{(4),(5)}	September 30, 2020		December 31, 2019	
	-50bp	+50bp	-50bp	+50bp
As at				
Net income attributed to shareholders (\$ millions)	\$ (1,000)	\$ 800	\$ (800)	\$ 800
MLI’s LICAT total ratio (change in percentage points) ⁽⁶⁾	(5)	4	(7)	5

Swap spreads	September 30, 2020		December 31, 2019	
	-20bp	+20bp	-20bp	+20bp
As at				
Net income attributed to shareholders (\$ millions)	\$ -	\$ -	\$ 100	\$ (100)
MLI’s LICAT total ratio (change in percentage points) ⁽⁶⁾	nil	nil	nil	nil

⁽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 Corporate and Other segment and excludes the impact of changes in segregated fund bond values due to changes in credit spreads. The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in corporate and swap spreads.

⁽³⁾ Sensitivities are based on projected asset and liability cash flows.

⁽⁴⁾ Corporate spreads are assumed to grade to the long-term average over five years.

⁽⁵⁾ As the sensitivity to a 50 basis point decline in corporate spreads includes the impact of a change in deterministic reinvestment scenarios where applicable, the impact of changes to corporate spreads for less than, or more than, the amounts indicated are unlikely to be linear.

⁽⁶⁾ LICAT impacts include realized and unrealized fair value change in AFS fixed income assets. Under LICAT, spread movements are determined from a selection of investment grade bond indices with BBB and better bonds for each jurisdiction. For LICAT, we use the following indices: FTSE TMX Canada All Corporate Bond Index, Barclays USD Liquid Investment Grade Corporate Index, and Nomura-BPI (Japan). LICAT impacts presented for corporate spreads do not reflect the impact of the scenario switch discussed below.

LICAT Scenario Switch

Typically, a reduction in interest rates improves LICAT capital ratios and vice-versa. However, when interest rates decline past a certain threshold, reflecting the combined movement in risk-free rates and corporate spreads, a different prescribed interest rate stress scenario needs to be taken into account in the LICAT ratio calculation according to the OSFI guideline.

The OSFI guideline specifies four stress scenarios for interest rates and prescribes the methodology to determine the most adverse scenario to apply for each geographic region based on current market inputs and the Company's balance sheet.

We estimate the potential impact of a switch in the scenarios would be approximately a one-time six percentage point decrease in MLI's total LICAT ratio. Under recently issued guidelines from OSFI in 1Q20, should the scenario switch be triggered, the impact would be reflected over 6 quarters using a rolling average of interest rate risk capital for participating products.

The potential negative impact of a switch in scenarios is not reflected in the stated risk-free rate and corporate spread sensitivities, as it is a one-time impact. After this one-time event, the sensitivity of the LICAT ratio to further decreases in risk-free interest rates would continue to improve the LICAT capital position.

The level of interest rates and corporate spreads that would trigger a switch in the scenarios is dependent on market conditions and movements in the Company's asset and liability position. The scenario switch, if triggered, could reverse in response to subsequent increases in rates and/or corporate spreads.

C5 Alternative long-duration asset performance risk

The following table shows the potential impact on net income attributed to shareholders resulting from an immediate 10% change in market values of ALDA followed by a return to the expected level of growth assumed in the valuation of policy liabilities. If market values were to remain flat for an entire year, the potential impact would be roughly equivalent to an immediate decline in market values equal to the expected level of annual growth assumed in the valuation of policy liabilities. Further, if after market values dropped 10% they continued to decline, remained flat, or grew more slowly than assumed in the valuation of policy liabilities, the potential impact on net income attributed to shareholders could be considerably more than shown. Refer to section D3 "Sensitivity of policy liabilities to asset related assumptions", for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions.

ALDA includes commercial real estate, timber and farmland real estate, oil and gas direct holdings, and private equities, some of which relate to oil and gas.

Potential impact on net income attributed to shareholders and MLI LICAT arising from changes in ALDA returns^{(1),(2),(3),(4),(5),(6)}

As at (\$ millions)	September 30, 2020		December 31, 2019	
	-10%	+10%	-10%	+10%
Net income attributed to shareholders				
Real estate, agriculture and timber assets	\$ (1,600)	\$ 1,400	\$ (1,300)	\$ 1,200
Private equities and other ALDA	(2,000)	1,800	(1,800)	1,700
Total	\$ (3,600)	\$ 3,200	\$ (3,100)	\$ 2,900
MLI's LICAT total ratio (change in percentage points)	(5)	3	(5)	4

(1) See "Caution Related to Sensitivities" above.

(2) This impact is calculated as at a point-in-time impact and does not include: (i) any potential impact on ALDA weightings; or (ii) any gains or losses on ALDA held in the Corporate and Other segment.

(3) The participating policy funds are largely self-supporting and generate no material impact on net income attributed to shareholders as a result of changes in ALDA returns. For some classes of ALDA, where there is not an appropriate long-term benchmark available, the return assumptions used in valuation are not permitted by the Standards of Practice and CIA guidance to result in a lower reserve than an assumption based on a historical return benchmark for public equities in the same jurisdiction.

(4) Net income impact does not consider any impact of the market correction on assumed future return assumptions.

(5) Please refer to section D3 "Sensitivity of policy liabilities to asset related assumptions" for more information on the level of growth assumed and on the net income sensitivity to changes in these long-term assumptions.

(6) The impact of changes to the portfolio asset mix supporting our North American legacy businesses are reflected in the sensitivities when the changes take place.

C6 Credit risk exposure measures

Allowances for losses on loans are established taking into consideration normal historical credit loss levels and future expectations, with an allowance for adverse deviations. Additionally, we make general provisions for credit losses from future asset impairments in the determination of policy liabilities. The amount of the provision for credit losses included in policy liabilities is established 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. To the extent that an asset is written off, or disposed of, any allowance and general provisions for credit losses are released.

Our general provision for credit losses included in policyholder liabilities as at September 30, 2020 was \$4,492 million compared to \$3,959 million as at December 31, 2019. This provision represents 1.7% of our fixed income assets¹ supporting policy liabilities reported on our Consolidated Statements of Financial Position as at September 30, 2020.

As at September 30, 2020 and December 31, 2019, the impact of a 50% increase in credit defaults over the next year in excess of the rates provided for in policy liabilities, would reduce net income attributed to shareholders by \$77 million and \$69 million, respectively.

Credit downgrades of fixed income investments would adversely impact our regulatory capital, as required capital levels for these investments are based on the credit quality of each instrument. In addition, credit downgrades could also lead to a higher general provision for credit losses than had been assumed in policy liabilities, resulting in an increase in policy liabilities and a reduction in net income attributed to shareholders. The estimated impact of a one-notch² ratings downgrade across 25% of fixed income assets would result in an increase to policy liabilities and a decrease to our net income attributed to shareholders of \$350 million post-tax. This ratings downgrade would result in a one percentage point reduction to our LICAT ratio. Approximately 58% of the impact on our policy liabilities and net income attributed to shareholders relates to fixed income assets rated BBB and below.

The table below shows net impaired assets and allowances for loan losses.

Net Impaired Assets and Loan Losses

As at (\$ millions, unless otherwise stated)	September 30, 2020	December 31, 2019
Net impaired fixed income assets	\$ 315	\$ 234
Net impaired fixed income assets as a % of total invested assets	0.076%	0.062%
Allowance for loan losses	\$ 110	\$ 20

C7 Risk factors - Pandemic risk and potential implications of COVID-19

In our 2019 MD&A we outlined risk factors that may affect future results, including the potential impact of catastrophic events such as the global spread of diseases or illnesses. In 1Q20, the viral outbreak known as COVID-19 rapidly developed into a global pandemic. In response, worldwide emergency measures were taken, and continue to be taken, to combat the spread of the virus, including the imposition of travel restrictions, business closure orders, and regional quarantines and physical distancing requirements. In addition, governments have implemented unprecedented monetary and fiscal policy changes aimed to help stabilize economies and capital markets.

We cannot predict future legal and regulatory responses to concerns about the COVID-19 pandemic and related public health issues and how these responses may impact our business. The COVID-19 pandemic, actions taken globally in response to it, and the ensuing economic downturn have caused significant disruption to global supply chains, business activities and economies. The depth, breadth and duration of these disruptions continue to remain highly uncertain. While the pandemic continues, with local or regional resurgences, governments continue to apply a variety of measures to concurrently mitigate further strains on public health systems and help stabilize economies. As a result, it is difficult to predict how significant the longer-term impact of the COVID-19 pandemic, including any responses to it, will be on the global economy and our business. These disruptions, if they continue, could have a significant adverse impact on our global businesses and operations and on our financial results.

We have outlined these risks in more detail in two parts. Those risk factors related specifically to the COVID-19 pandemic are described in this section and those related to the broader economic uncertainty are described below (see C8 - Global outlook and economic uncertainties).

Strategic Risk Factors

- The ongoing COVID-19 pandemic could continue to adversely impact our financial results in future periods as a result of reduced new business, reduced asset-based fee revenue, and net unfavourable policyholder experience including claims experience and premium persistency. The uncertainty around the expected duration of the pandemic and the measures put in place by governments to respond to it could further depress business activity and financial markets, which could lead to lower net income attributed to shareholders. While in recent years we've taken significant actions

¹ Includes debt securities, private placements and mortgages.

² A one-notch downgrade is equivalent to a ratings downgrade from A to A- or BBB- to BB+.

to diversify and bolster the resilience of our Company, further management actions may be required, including, but not limited to, changes to business and product mix, pricing structures on in-force and new business, investment mix, hedging programs, and the use of reinsurance.

- Collaborative activities required to advance our strategic initiatives could also be impeded as emergency measures to combat the virus significantly restrict direct human interactions and movement. Although we expect that our digital capabilities and tools should enable us to reasonably conduct business while emergency measures are in place, there can be no assurance these or other strategies taken to address adverse impacts related to the COVID-19 pandemic will be successful.
- We have experienced ongoing disruptions to our underwriting processes as a result of government measures taken to stop the spread of the virus, including the temporary closure of paramedical services in some markets, as well as consumer fears over in-person services which have led to lower sales volumes. To help mitigate the impacts of these disruptions, and to continue to support our customers with their insurance needs, we took steps to temporarily adjust our underwriting processes to allow us to accept certain low risk applications. We will continue to monitor the situation and adjust underwriting practices where necessary (i.e. digital applications and further modifications to underwriting requirements in lower risk applications).

Product Risk Factors

- Claims and lower lapses on certain products resulting from pandemic-related events could cause substantial volatility in our financial results in any period and could materially reduce our profitability or impair our financial condition. Further, large-scale events such as COVID-19 reduce the overall level of economic activity as well as activity through our distribution channels, which could continue to adversely impact our ability to write new business. It is also possible that geographic concentration of insured individuals could increase the severity of claims experience. The effectiveness of external parties, including governmental and non-governmental organizations, in combating the pandemic is outside of our control but could also have a material and adverse impact on our results of operations.
- Increased economic uncertainty and increased unemployment resulting from the economic impacts of the spread of COVID-19 may also result in policyholders seeking sources of liquidity and withdrawing at rates greater than we previously expected. If premium persistency is less than anticipated or if policyholder lapse rates significantly exceed our expectations, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.
- We purchase reinsurance protection on certain risks underwritten or assumed by our various insurance businesses. As a result of COVID-19 we may find reinsurance more difficult or costly to obtain. In addition, reinsurers may dispute, or seek to reduce or eliminate, coverage on policies as a result of any changes to policies or practices we make as a result of COVID-19.

Operational Risk Factors

- The pandemic has resulted in the imposition of government measures to restrict the movement of people, including travel bans and physical distancing requirements and other containment measures. These measures have led to disruptions to business operations across our global offices. While our business continuity plans have been executed across the organization with the vast majority of employees shifting to remote work arrangements and our networks and systems have generally remained stable in supporting this large-scale effort, there can be no assurance that our ability to continue to operate our business will not be adversely impacted if our networks and systems, including those aspects of our operations which rely on services provided by third parties, fail to operate as expected. The successful execution of business continuity strategies by third parties is outside our control. If one or more of the third parties to whom we outsource certain critical business activities fails to perform as a result of the impacts from the spread of COVID-19, it may have a material adverse effect on our business and operations.
- In the first and second quarter of 2020, our global processing centres' operational capacity was temporarily impacted due to strict government measures to lock down businesses and limit the movement of people within their jurisdictions, which resulted in slower processing times and lower than expected customer experience. This reduction in operating capacity required us to reallocate capacity to less impacted geographies, expand the use of remote work capabilities, and deprioritize non-essential business activities. While the capacity of our global processing centres has been restored, there can be no assurance that strategies taken to mitigate COVID-19 related pandemic impacts will continue to be successful if operating conditions deteriorate further in the future, either due to additional restrictions imposed by authorities or because of any other adverse development.
- The implementation of widespread remote work arrangements also increases other operational risks, including, but not limited to, fraud, money-laundering, information security, privacy, and third-party risks. We are relying on our risk management strategies to monitor and mitigate these and other operational risks during this period of heightened uncertainty.

- We may incur increased administrative expenses as a result of process and other changes we implemented in response to COVID-19. In addition, we may face increased workplace safety costs and risks and employee-relations challenges and claims.

C8 Risk Factors - Global outlook and economic uncertainties

The COVID-19 pandemic and actions taken in response to it have resulted in a significant economic downturn and significant disruptions in supply chains and business activity globally. Updates to specific risk factors are noted below:

Market Risk Factors

- The pandemic and resulting economic downturn has contributed to significant volatility and declines in financial and commodity markets. Central banks announced emergency interest rate cuts, while governments implemented unprecedented fiscal stimulus packages to support economic stability. The pandemic has resulted in a global recessionary environment with continued market volatility and low or negative interest rates, which may continue to impact our net income attributed to shareholders. Our investment portfolio has been, and may continue to be, adversely affected as a result of market developments from the COVID-19 pandemic and related uncertainty.
- We have hedging programs, supported by a comprehensive collateral management program in place to help mitigate the risk of interest rate and public equity market volatility. Our interest rate and public equity variable annuity hedging programs have performed with a high level of effectiveness during this period of volatility to date.
- Extreme market volatility may leave us unable to react to market events in a manner consistent with our historical investment practices in dealing with more orderly markets. Market dislocations, decreases in observable market activity or unavailability of information arising from the spread of COVID-19, may restrict our access to key inputs used to derive certain estimates and assumptions made in connection with financial reporting or otherwise, including estimates and changes in long term macro-economic assumptions relating to accounting for future credit losses. Restricted access to such inputs may make our financial statement balances and estimates and assumptions used to run our business subject to greater variability.
- The global recessionary environment could continue to put downward pressure on asset valuations and increase the risk of potential impairments of investments, in particular, for more exposed sectors such as transportation, services and consumer cyclical industries. The COVID-19 pandemic has contributed to supply and demand shocks that have created historic dislocation in the energy markets and could continue to adversely impact our oil and gas and other energy-related investments. Furthermore, delays in general return-to-office policies and practices and/or reduced demand for office space could continue to have a negative impact on our commercial real estate portfolio.

Liquidity risk and capital management

- Extreme market volatility and stressed conditions resulting from COVID-19 could result in additional cash and collateral demands primarily from changes to policyholder termination or renewal rates, withdrawals of customer deposit balances, borrowers renewing or extending their loans when they mature, derivative settlements or collateral demands, reinsurance settlements or collateral demands and our willingness to support the local solvency position of our subsidiaries. Such an environment could also limit our access to capital markets. We maintain strong financial strength ratings from our credit rating agencies. However, sustained global economic uncertainty could result in adverse credit ratings changes which in turn could result in more costly or limited access to funding sources. In addition, while we currently have a variety of sources of liquidity including cash balances, short-term investments, government and highly rated corporate bonds, and access to contingent liquidity facilities, there can be no assurance that these sources will provide us with sufficient liquidity on commercially reasonable terms in the future.
- On March 13, 2020, OSFI announced measures to support the resilience of financial institutions including their expectation for all federally regulated financial institutions that dividend increases and share buybacks should be halted for the time being. Accordingly, the Company has not repurchased its shares since March 13, 2020.

Credit Risk Factors

- A prolonged economic slowdown or recession could continue to impact a wide range of industries to which we are exposed. Further, borrower or counterparty downgrades or defaults would cause increased provisions or impairments related to our general fund invested assets and derivative financial instruments, and an increase in provisions for future credit impairments to be included in our policy liabilities. This could result in losses potentially above our long-term expected levels.
- We have experienced downgrades across some industries in our portfolio which may continue in subsequent quarters. The general fund portfolio is constructed through credit selection criteria and is diversified with the majority of the portfolio rated investment grade which helps to mitigate risks associated with the current economic downturn. Our approach includes seeking investments which perform more favourably in the longer term, throughout economic

and business cycles, but there can be no assurance these or other strategies taken to address adverse impacts related to the COVID-19 pandemic will be successful.

D CRITICAL ACTUARIAL AND ACCOUNTING POLICIES

D1 Critical actuarial and accounting policies

Our significant accounting policies are described in note 1 to our Consolidated Financial Statements for the year ended December 31, 2019. The critical actuarial and accounting policies and estimation processes relate to the determination of insurance and investment contract liabilities, assessment of control over other entities for consolidation, estimation of fair value of invested assets, evaluation of invested asset impairment, accounting for derivative financial instruments, determination of pension and other post-employment benefit obligations and expenses, accounting for income taxes and uncertain tax positions and valuation and impairment of goodwill and intangible assets as described on pages 60 to 68 of our 2019 Annual Report.

D2 Actuarial methods and assumptions

A comprehensive review of actuarial methods and assumptions is performed annually. The review is designed to reduce the Company's exposure to uncertainty by ensuring assumptions for both asset and liability related risks remain appropriate. This is accomplished by monitoring experience and selecting assumptions which represent a current best estimate view of expected future experience, and margins for adverse deviations 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 changes in economic environment are likely to result in future changes to the actuarial assumptions, which could materially impact the insurance contract liabilities.

The completion of the 2020 annual review of actuarial methods and assumptions resulted in an increase in insurance contract liabilities of \$563 million, net of reinsurance, and a decrease in net income attributed to shareholders of \$198 million post-tax.

For the three and nine months ended September 30, 2020 (\$ millions)	Change in insurance contract liabilities, net of reinsurance			Change in net Income attributed to shareholders (post-tax)
	Total	Attributed to Participating policyholders' account ⁽¹⁾	Attributed to shareholders' account	
Canada variable annuity product review	\$ (42)	\$ -	\$ (42)	\$ 31
Mortality and morbidity updates	(304)	(1)	(303)	232
Lapses and policyholder behaviour	893	-	893	(682)
Investment-related updates	(212)	(153)	(59)	31
Other updates	228	455	(227)	190
Net impact	\$ 563	\$ 301	\$ 262	\$ (198)

⁽¹⁾ The change in insurance contract liabilities, net of reinsurance, attributable to the participating policyholders' account was driven by refinements to our valuation models, primarily due to annual updates to reflect market movements in the first half of 2020.

Canada variable annuity product review

The review of our variable annuity product in Canada resulted in a \$31 million post-tax gain to net income attributed to shareholders.

The gain was driven by refinements to our segregated fund guaranteed minimum withdrawal benefit valuation models, partially offset by updates to lapse assumptions to reflect emerging experience.

Updates to mortality and morbidity

Mortality and morbidity updates resulted in a \$232 million post-tax gain to net income attributed to shareholders.

The gain was primarily driven by a review of our reinsurance arrangements and mortality margins for preferred risk classes in our Canada Individual Insurance business, as well as updates to the morbidity assumptions on certain products in Japan. This was partially offset by a charge from the review of mortality assumptions in our U.S. Insurance business, where emerging experience showed higher mortality at older attained ages.

Other updates to mortality and morbidity assumptions were made across several products, largely in Canada, to reflect recent experience resulting in a net post-tax gain to net income attributable to shareholders.

Updates to lapses and policyholder behaviour

Updates to lapses and policyholder behaviour assumptions resulted in a \$682 million post-tax charge to net income attributed to shareholders.

We completed a detailed review of the lapse assumptions for universal life policies in Canada, including both yearly renewable term, and level cost of insurance products. We lowered the ultimate lapse assumptions due to the emergence of more recent data, which resulted in a post-tax charge of \$504 million to net income attributed to shareholders, primarily driven by adverse experience on large policies.

Other updates to lapse and policyholder behaviour assumptions were made across several products to reflect recent experience resulting in a net post-tax charge to net income attributable to shareholders. The primary driver of the charge was adverse lapse experience from retail policies in Japan.

Investment-related updates

Updates to investment return assumptions resulted in a \$31 million post-tax gain to net income attributed to shareholders.

Other updates

Other updates resulted in a \$190 million post-tax gain to net income attributed to shareholders. This incorporated several positive items including updates to our U.S. segregated fund guaranteed minimum withdrawal benefit valuation models, as well as updates to the projection of our tax and liability cash flows in the U.S. to align with updated U.S. tax and statutory reporting standard changes, partially offset by refinements to our valuation models, primarily driven by annual updates to reflect market movements in the first half of 2020.

Impact of changes in actuarial methods and assumptions by segment

The impact of changes in actuarial methods and assumptions in Canada resulted in a \$77 million post-tax gain to net income attributed to shareholders. The gain was driven by updates to certain Individual Insurance reinsurance arrangements and mortality margins for preferred risk classes, as well as refinements to our valuation models, primarily driven by annual updates to reflect market movements in the first half of 2020, largely offset by updated lapse assumptions on our universal life products.

In the U.S., the impact of changes in actuarial methods and assumptions resulted in a \$301 million post-tax charge to net income attributed to shareholders. The charge was driven by updates to our life mortality assumptions to reflect emerging experience, as well as refinements to our valuation models, primarily driven by annual updates to reflect market movements in the first half of 2020, partially offset by updates to our U.S. segregated fund guaranteed minimum withdrawal benefit valuation models, as well as updates to the projection of our tax and liability cash flows to align with updated U.S. tax and statutory reporting standards.

The impact of changes in actuarial methods and assumptions in Asia resulted in a \$41 million post-tax charge to net income attributed to shareholders. The charge was primarily driven by Japan, whereby lapse and morbidity updates on certain products to reflect emerging experience were partially offsetting.

The impact of changes in actuarial methods and assumptions in Corporate and Other (which includes our Reinsurance business) resulted in a \$67 million post-tax gain to net income attributed to shareholders.

D3 Sensitivity of policy liabilities to asset related assumptions

When the assumptions underlying our determination of policy liabilities are updated to reflect recent and emerging experience or change in outlook, the result is a change in the value of policy liabilities which in turn affects net income attributed to shareholders. The sensitivity of net income attributed to shareholders to updates to 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 policy liabilities. In practice, experience for each assumption will frequently vary by geographic market and business, and assumption updates are made on a business/geographic specific basis. Actual results can differ materially from these estimates for a variety of reasons including the interaction among these factors when more than one changes, changes in actuarial and investment return and future investment activity assumptions, actual experience differing from the assumptions, changes in business mix, effective tax rates and other market factors, and the general limitations of our internal models.

Potential impact on net income attributed to shareholders arising from changes to asset related assumptions supporting actuarial liabilities

As at (\$ millions)	Increase (decrease) in after-tax net income attributed to shareholders			
	September 30, 2020		December 31, 2019	
	Increase	Decrease	Increase	Decrease
Asset related assumptions updated periodically in valuation basis changes				
100 basis point change in future annual returns for public equities ⁽¹⁾	\$ 500	\$ (500)	\$ 500	\$ (500)
100 basis point change in future annual returns for ALDA ⁽²⁾	4,300	(5,200)	3,800	(4,400)
100 basis point change in equity volatility assumption for stochastic segregated fund modelling ⁽³⁾	(200)	200	(300)	300

⁽¹⁾ The sensitivity to public equity returns above includes the impact on both segregated fund guarantee reserves and on other policy liabilities. Expected long-term annual market growth assumptions for public equities are based on long-term historical observed experience and compliance with actuarial standards. As at September 30, 2020, the growth rates inclusive of dividends in the major markets used in the stochastic valuation models for valuing segregated fund guarantees are 9.2% per annum in Canada, 9.6% per annum in the U.S. and 6.2% per annum in Japan. Growth assumptions for European equity funds are market-specific and vary between 8.3% and 9.9%.

⁽²⁾ ALDA include commercial real estate, timber, farmland, direct oil and gas properties, and private equities, some of which relate to oil and gas. Expected long-term return assumptions for ALDA and public equity are set in accordance with the Standards of Practice for the valuation of insurance contract liabilities and guidance published by the CIA. Annual best estimate return assumptions for ALDA and public equity include market growth rates and annual income, such as rent, production proceeds and dividends, and will vary based on our holding period. Over a 20-year horizon, our best estimate return assumptions range between 5.25% and 11.65%, with an average of 9.3% based on the current asset mix backing our guaranteed insurance and annuity business as of September 30, 2020. Our return assumptions including the margins for adverse deviations in our valuation, which take into account the uncertainty of achieving the returns, range between 2.5% and 7.5%, with an average of 6.1% based on the asset mix backing our guaranteed insurance and annuity business as of September 30, 2020.

⁽³⁾ Volatility assumptions for public equities are based on long-term historical observed experience and compliance with actuarial standards. The resulting volatility assumptions are 16.5% per annum in Canada and 17.1% per annum in the U.S. for large-cap public equities, and 19.1% per annum in Japan. For European equity funds, the volatility varies between 16.3% and 17.7%.

D4 Accounting and reporting changes

For accounting and reporting changes during the quarter, refer to note 2 of our unaudited Interim Consolidated Financial Statements for the three and nine months ended September 30, 2020.

In addition, we have provided enhanced disclosures on measurement uncertainty in notes 1, 3 and 11 of our unaudited Interim Consolidated Financial Statements for the three and nine months ended September 30, 2020.

E OTHER

E1 Outstanding shares – selected information

Common shares

As at October 31, 2020 MFC had 1,939,829,037 common shares outstanding.

E2 Legal and regulatory proceedings

We are regularly involved in legal actions, both as a defendant and as a plaintiff. Information on legal and regulatory proceedings can be found in note 12 of our unaudited Interim Consolidated Financial Statements for the three and nine months ended September 30, 2020.

E3 Performance and non-GAAP measures

We use a number of non-GAAP financial measures to measure overall performance and to assess each of our businesses. A financial measure is considered a non-GAAP measure for Canadian securities law purposes if it is presented other than in accordance with generally accepted accounting principles used for the Company's audited financial statements. Non-GAAP measures include: core earnings (loss); core ROE; diluted core earnings per common share; pre-tax core earnings; core earnings before income taxes, depreciation and amortization ("core EBITDA"); core EBITDA margin; core investment gains; core general expenses; constant exchange rate basis (measures that are reported on a constant exchange rate basis include percentage growth/decline in core earnings, core general expenses, pre-tax core earnings, sales, APE sales, gross flows, net flows, core EBITDA, new business value ("NBV"), assets under management, assets under management and administration ("AUMA"), average assets under management and administration ("average AUMA") and Global Wealth and Asset Management revenue); assets under administration; expense efficiency ratio; assets under management and administration; assets under management; average AUMA, consolidated capital; embedded value; new business value; new business value margin ("NBV margin"); sales; APE sales; gross flows; and net flows. Non-GAAP financial measures are not defined terms under GAAP and, therefore, are unlikely to be comparable to similar terms used by other issuers. Therefore, they should not be considered in isolation or as a substitute for any other financial information prepared in accordance with GAAP.

Core earnings (loss) is a non-GAAP measure which we believe aids investors in better understanding the long-term earnings capacity and valuation of the business. Core earnings allows investors to focus on the Company's operating performance by excluding the direct impact of changes in equity markets and interest rates, changes in actuarial methods and assumptions as well as a number of other items, outlined below, that we believe are material, but do not reflect the underlying earnings capacity of the business. For example, due to the long-term nature of our business, the mark-to-market movements of equity markets, interest rates, foreign currency exchange rates and commodity prices from period-to-period can, and frequently do, have a substantial impact on the reported amounts of our assets, liabilities and net income attributed to shareholders. These reported amounts are not actually realized at the time and may never be realized if the markets move in the opposite direction in a subsequent period. This makes it very difficult for investors to evaluate how our businesses are performing from period-to-period and to compare our performance with other issuers.

We believe that core earnings better reflect the underlying earnings capacity and valuation of our business. We use core earnings as the basis for management planning and reporting and, along with net income attributed to shareholders, as a key metric used in our short and mid-term incentive plans at the total Company and operating segment level.

While core earnings is relevant to how we manage our business and offers a consistent methodology, it is not insulated from macro-economic factors which can have a significant impact. See "Quarterly financial information" below for reconciliation of core earnings to net income (loss) attributed to shareholders.

Any future changes to the core earnings definition referred to below, will be disclosed.

Items included in core earnings:

1. Expected earnings on in-force policies, including expected release of provisions for adverse deviation, fee income, margins on group business and spread business such as Manulife Bank and asset fund management.
2. Macro hedging costs based on expected market returns.
3. New business strain and gains.
4. Policyholder experience gains or losses.
5. Acquisition and operating expenses compared with expense assumptions used in the measurement of policy liabilities.
6. Up to \$400 million of net favourable investment-related experience reported in a single year, which are referred to as "core investment gains". This means up to \$100 million in the first quarter, up to \$200 million on a year-to-date basis in the second quarter, up to \$300 million on a year-to-date basis in the third quarter and up to \$400 million on a full year basis in the fourth quarter. Any investment-related experience losses reported in a quarter will be offset against the net year-to-date investment-related experience gains with the difference being included in core earnings subject to a maximum of the year-to-date core investment gains and a minimum of zero, which reflects our expectation that investment-related experience will be positive through-the-business cycle. To the extent any investment-related experience losses cannot be fully offset in a quarter they will be carried forward to be offset against investment-related experience gains in subsequent quarters in the same year, for purposes of determining core investment gains. Investment-related experience relates to fixed income investing, ALDA returns, credit experience and asset mix changes other than those related to a strategic change. An example of a strategic asset mix change is outlined below.
 - This favourable and unfavourable investment-related experience is a combination of reported investment experience as well as the impact of investing activities on the measurement of our policy liabilities. We do not attribute specific components of investment-related experience to amounts included or excluded from core earnings.
 - The \$400 million threshold represents the estimated average annualized amount of net favourable investment-related experience that the Company reasonably expects to achieve through-the-business cycle based on historical experience. It is not a forecast of expected net favourable investment-related experience for any given fiscal year.
 - Our average net annualized investment-related experience calculated from the introduction of core earnings in 2012 to the end of 2019 was \$527 million (2012 to the end of 2018 was \$493 million).
 - The decision announced on December 22, 2017 to reduce the allocation to ALDA in the portfolio asset mix supporting our legacy businesses was the first strategic asset mix change since we introduced the core earnings metric in 2012. We refined our description of investment-related experience in 2017 to note that asset mix changes other than those related to a strategic change are taken into consideration in the investment-related experience component of core investment gains.
 - While historical investment return time horizons may vary in length based on underlying asset classes generally exceeding 20 years, for purposes of establishing the threshold, we look at a business cycle that is five or more years

and includes a recession. We monitor the appropriateness of the threshold as part of our annual five-year planning process and would adjust it, either to a higher or lower amount, in the future if we believed that our threshold was no longer appropriate.

- Specific criteria used for evaluating a potential adjustment to the threshold may include, but are not limited to, the extent to which actual investment-related experience differs materially from actuarial assumptions used in measuring insurance contract liabilities, material market events, material dispositions or acquisitions of assets, and regulatory or accounting changes.
7. Earnings on surplus other than mark-to-market items. Gains on available-for-sale (“AFS”) equities and seed money investments in segregated and mutual funds 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 substantively enacted income tax rate changes.

Items excluded from core earnings:

1. The direct impact of equity markets and interest rates and variable annuity guarantee liabilities includes the items listed below.
 - The earnings impact of the difference between the net increase (decrease) in variable annuity liabilities that are dynamically hedged and the performance of the related hedge assets. Our variable annuity dynamic hedging strategy is not designed to completely offset the sensitivity of insurance and investment contract liabilities to all risks or measurements associated with the guarantees embedded in these products for a number of reasons, including; provisions for adverse deviation, fund performance, the portion of the interest rate risk that is not dynamically hedged, realized equity and interest rate volatilities and changes to policyholder behaviour.
 - Gains (charges) on variable annuity guarantee liabilities not dynamically hedged.
 - Gains (charges) on general fund equity investments supporting policy liabilities and on fee income.
 - Gains (charges) on macro equity hedges relative to expected costs. The expected cost of macro hedges is calculated using the equity assumptions used in the valuation of insurance and investment contract liabilities.
 - Gains (charges) on higher (lower) fixed income reinvestment rates assumed in the valuation of insurance and investment contract liabilities.
 - Gains (charges) on sale of AFS bonds and open derivatives not in hedging relationships in the Corporate and Other segment.
2. Net favourable investment-related experience in excess of \$400 million per annum or net unfavourable investment-related experience on a year-to-date basis.
3. Mark-to-market gains or losses on assets held in the Corporate and Other segment other than gains on AFS equities and seed money investments in new segregated or mutual funds.
4. Changes in actuarial methods and assumptions. As noted in the “Critical actuarial and accounting policies” section of our 2019 MD&A, policy liabilities for IFRS are valued in Canada under standards established by the Actuarial Standards Board. The standards require a comprehensive review of actuarial methods and assumptions to be performed annually. The review is designed to reduce the Company’s exposure to uncertainty by ensuring assumptions for both asset related and liability related risks remain appropriate and is accomplished by monitoring experience and selecting assumptions which represent a current best estimate view of expected future experience, and margins that are appropriate for the risks assumed. Changes related to ultimate reinvestment rates (“URR”) are included in the direct impact of equity markets and interest rates and variable annuity guarantee liabilities. By excluding the results of the annual reviews, core earnings assist investors in evaluating our operational performance and comparing our operational performance from period to period with other global insurance companies because the associated gain or loss is not reflective of current year performance and not reported in net income in most actuarial standards outside of Canada.
5. The impact on the measurement of policy liabilities of changes in product features or new reinsurance transactions, if material.

6. Goodwill impairment charges.
7. Gains or losses on disposition of a business.
8. Material one-time only adjustments, including highly unusual/extraordinary and material legal settlements or other items that are material and exceptional in nature.
9. Tax on the above items.
10. Impact of enacted or substantially enacted income tax rate changes.

The following table summarizes for the past eight quarters core earnings and net income (loss) attributed to shareholders.

Total Company

(\$ millions, unaudited)	Quarterly Results								YTD Results	
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	2020	2019
Core earnings (loss)										
Asia	\$ 559	\$ 489	\$ 491	\$ 494	\$ 520	\$ 471	\$ 520	\$ 463	\$ 1,539	\$ 1,511
Canada	279	342	237	288	318	312	283	305	858	913
U.S.	498	602	416	489	471	441	475	454	1,516	1,387
Global Wealth and Asset Management	308	238	250	265	281	242	233	231	796	756
Corporate and Other (excluding core investment gains)	(191)	(110)	(366)	(159)	(163)	(114)	(63)	(216)	(667)	(340)
Core investment gains	-	-	-	100	100	100	100	100	-	300
Total core earnings	1,453	1,561	1,028	1,477	1,527	1,452	1,548	1,337	4,042	4,527
Items to reconcile core earnings (loss) to net income (loss) attributed to shareholders:										
Investment-related experience outside of core earnings	147	(916)	(608)	182	(289)	146	327	(130)	(1,377)	184
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	390	73	792	(389)	(494)	(144)	249	(675)	1,255	(389)
Change in actuarial methods and assumptions	(198)	-	-	-	(21)	-	-	-	(198)	(21)
Reinsurance transactions	276	9	12	(34)	-	63	52	142	297	115
Restructuring charge	-	-	-	-	-	-	-	(63)	-	-
Tax-related items and other	-	-	72	(8)	-	(42)	-	(18)	72	(42)
Net income (loss) attributed to shareholders	\$ 2,068	\$ 727	\$ 1,296	\$ 1,228	\$ 723	\$ 1,475	\$ 2,176	\$ 593	\$ 4,091	\$ 4,374

Asia

(\$ millions, unaudited)	Quarterly Results								YTD Results	
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	2020	2019
Asia core earnings⁽¹⁾	\$ 559	\$ 489	\$ 491	\$ 494	\$ 520	\$ 471	\$ 520	\$ 463	\$ 1,539	\$ 1,511
Items to reconcile core earnings to net income (loss) attributed to shareholders:										
Investment-related experience outside of core earnings	81	(40)	50	46	(13)	47	116	99	91	150
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	44	(81)	(458)	96	(372)	(42)	59	(244)	(495)	(355)
Change in actuarial methods and assumptions	(41)	-	-	-	(7)	-	-	-	(41)	(7)
Reinsurance transactions	8	9	12	-	-	-	-	-	29	-
Net income (loss) attributed to shareholders⁽¹⁾	\$ 651	\$ 377	\$ 95	\$ 636	\$ 128	\$ 476	\$ 695	\$ 318	\$ 1,123	\$ 1,299

⁽¹⁾ 2018 core earnings and net income (loss) attributed to shareholders have been updated to reflect the 2019 methodology for allocating capital and interest on surplus to our insurance segments from the Corporate and Other segment.

Canada

(\$ millions, unaudited)	Quarterly Results								YTD Results	
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	2020	2019
Canada core earnings⁽¹⁾	\$ 279	\$ 342	\$ 237	\$ 288	\$ 318	\$ 312	\$ 283	\$ 305	\$ 858	\$ 913
Items to reconcile core earnings to net income (loss) attributed to shareholders:										
Investment-related experience outside of core earnings	(28)	(186)	(378)	69	(47)	2	453	(143)	(592)	408
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	(43)	(14)	(725)	(97)	(335)	7	11	(234)	(782)	(317)
Change in actuarial methods and assumptions	77	-	-	-	(108)	-	-	-	77	(108)
Reinsurance transactions	6	-	-	(34)	-	-	4	-	6	4
Tax-related items and other	-	-	-	-	-	(4)	-	(2)	-	(4)
Net income (loss) attributed to shareholders⁽¹⁾	\$ 291	\$ 142	\$ (866)	\$ 226	\$ (172)	\$ 317	\$ 751	\$ (74)	\$ (433)	\$ 896

⁽¹⁾ 2018 core earnings and net income (loss) attributed to shareholders have been updated to reflect the 2019 methodology for allocating capital and interest on surplus to our insurance segments from the Corporate and Other segment.

U.S.

(\$ millions, unaudited)	Quarterly Results								YTD Results	
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	2020	2019
U.S. core earnings⁽¹⁾	\$ 498	\$ 602	\$ 416	\$ 489	\$ 471	\$ 441	\$ 475	\$ 454	\$ 1,516	\$ 1,387
Items to reconcile core earnings to net income (loss) attributed to shareholders:										
Investment-related experience outside of core earnings	121	(682)	(266)	177	(134)	166	(143)	15	(827)	(111)
Direct impact of equity markets and interest rates and variable annuity guarantee liabilities	311	(1,500)	1,702	(515)	(66)	(173)	61	(95)	513	(178)
Change in actuarial methods and assumptions	(301)	-	-	-	71	-	-	-	(301)	71
Reinsurance transactions	262	-	-	-	-	63	48	142	262	111
Tax-related items and other	-	-	-	(8)	-	5	-	(3)	-	5
Net income (loss) attributed to shareholders⁽¹⁾	\$ 891	\$ (1,580)	\$ 1,852	\$ 143	\$ 342	\$ 502	\$ 441	\$ 513	\$ 1,163	\$ 1,285

⁽¹⁾ 2018 core earnings and net income (loss) attributed to shareholders have been updated to reflect the 2019 methodology for allocating capital and interest on surplus to our insurance segments from the Corporate and Other segment.

Global Wealth and Asset Management

(\$ millions, unaudited)	Quarterly Results								YTD Results	
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	2020	2019
Global WAM core earnings	\$ 308	\$ 238	\$ 250	\$ 265	\$ 281	\$ 242	\$ 233	\$ 231	\$ 796	\$ 756
Items to reconcile core earnings to net income (loss) attributed to shareholders:										
Tax-related items and other	-	-	-	-	-	1	-	(13)	-	1
Net income (loss) attributed to shareholders	\$ 308	\$ 238	\$ 250	\$ 265	\$ 281	\$ 243	\$ 233	\$ 218	\$ 796	\$ 757

Corporate and Other

(\$ millions, unaudited)	Quarterly Results								YTD Results	
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	2020	2019
Corporate and Other core income (loss) (excluding core investment gains)⁽¹⁾	\$ (191)	\$ (110)	\$ (366)	\$ (159)	\$ (163)	\$ (114)	\$ (63)	\$ (216)	\$ (667)	\$ (340)
Core investment gains (loss)	-	-	-	100	100	100	100	100	-	300
Total core earnings (loss)	(191)	(110)	(366)	(59)	(63)	(14)	37	(116)	(667)	(40)
Other items to reconcile core earnings (loss) to net income (loss) attributed to shareholders:										
Investment-related experience outside of core earnings	(27)	(8)	(14)	(110)	(95)	(69)	(99)	(101)	(49)	(263)
Direct impact of equity markets and interest rates	78	1,668	273	127	279	64	118	(102)	2,019	461
Changes in actuarial methods and assumptions	67	-	-	-	23	-	-	-	67	23
Tax-related items and other	-	-	72	-	-	(44)	-	-	72	(44)
Restructuring charge	-	-	-	-	-	-	-	(63)	-	-
Net income (loss) attributed to shareholders⁽¹⁾	\$ (73)	\$ 1,550	\$ (35)	\$ (42)	\$ 144	\$ (63)	\$ 56	\$ (382)	\$ 1,442	\$ 137

⁽¹⁾ The Corporate and Other segment includes earnings on assets backing capital net of amounts allocated to operating segments. 2018 core income (loss) (excluding core investment gains) and net income (loss) attributed to shareholders have been updated to reflect the 2019 methodology for allocating capital and interest on surplus to our insurance segments from the Corporate and Other segment.

Core return on common shareholders' equity ("core ROE") is a non-GAAP profitability measure that presents core earnings available to common shareholders as a percentage of the capital deployed to earn the core earnings. The Company calculates core ROE using average common shareholders' equity.

Diluted core earnings per common share is core earnings available to common shareholders expressed per diluted weighted average common share outstanding.

The Company also uses financial performance measures that are prepared on a **constant exchange rate basis**, which are non-GAAP measures that exclude the impact of currency fluctuations (from local currency to Canadian dollars at a total Company level and from local currency to U.S. dollars in Asia). Quarterly amounts stated on a constant exchange rate basis in this MD&A are calculated, as appropriate, using the income statement and balance sheet exchange rates effective for 3Q20. Measures that are reported on a constant exchange rate basis include growth in core earnings, core general expenses, pre-tax core earnings, sales, APE sales, gross flows, net flows, core EBITDA, new business value, assets under management, assets under management and administration, average assets under management and administration and Global Wealth and Asset Management revenue.

Assets under management and administration ("AUMA") is a non-GAAP measure of the size of the Company. It is comprised of the non-GAAP measures assets under management ("AUM"), which includes both assets of general account and external client assets for which we provide investment management services, and assets under administration ("AUA"), which includes assets for which we provide administrative services only. Assets under management and administration is a common industry metric for WAM businesses.

Assets under management and administration			
As at	September 30,	June 30,	September 30,
(\$ millions)	2020	2020	2019
Total invested assets	\$ 414,234	\$ 413,864	\$ 380,115
Segregated funds net assets	351,408	342,043	336,621
Assets under management per financial statements	765,642	755,907	716,736
Mutual funds	221,118	213,125	207,371
Institutional advisory accounts (excluding segregated funds)	105,499	108,036	93,102
Other funds	9,914	9,722	8,916
Total assets under management	1,102,173	1,086,790	1,026,125
Other assets under administration	155,211	149,511	140,425
Currency impact	-	(16,544)	9,056
AUMA at constant exchange rates	\$ 1,257,384	\$ 1,219,757	\$ 1,175,606

Average assets under management and administration ("average AUMA") is a non-GAAP measure of the average of Global WAM's AUMA during the reporting period. It is a measure used in analyzing and explaining fee income and earnings of our Global Wealth and Asset Management segment. It is calculated as the average of the opening balance of AUMA and the

ending balance of AUMA using daily balances where available and month-end or quarter-end averages when daily averages are unavailable.

Consolidated capital is a non-GAAP measure. It 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. Consolidated capital is calculated as the sum of (i) total equity excluding accumulated other comprehensive income (“AOCI”) on cash flow hedges; and (ii) liabilities for capital instruments.

Consolidated capital

As at (\$ millions)	September 30, 2020	June 30, 2020	September 30, 2019
Total equity	\$ 53,884	\$ 53,476	\$ 50,770
Add AOCI loss on cash flow hedges	300	329	217
Add qualifying capital instruments	7,915	7,950	8,143
Consolidated capital	\$ 62,099	\$ 61,755	\$ 59,130

Core EBITDA is a non-GAAP measure which Manulife uses to better understand the long-term earnings capacity and valuation of our Global WAM business on a basis more comparable to how the profitability of global asset managers is generally measured. Core EBITDA presents core earnings before the impact of interest, taxes, depreciation, and amortization. Core EBITDA excludes certain acquisition expenses related to insurance contracts in our retirement businesses which are deferred and amortized over the expected life time of the customer relationship under the CALM. Core EBITDA was selected as a key performance indicator for our Global WAM business, as EBITDA is widely used among asset management peers, and core earnings is a primary profitability metric for the Company overall.

Core EBITDA margin is a non-GAAP measure which Manulife uses to better understand the long-term profitability of our Global WAM business on a more comparable basis to how profitability of global asset managers are measured. Core EBITDA margin presents core earnings before the impact of interest, taxes, depreciation, and amortization divided by total revenue from these businesses. Core EBITDA margin was selected as a key performance indicator for our Global WAM business, as EBITDA margin is widely used among asset management peers, and core earnings is a primary profitability metric for the Company overall.

Global Wealth and Asset Management

(\$ millions, unless otherwise stated, unaudited)	Quarterly Results							
	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18
Core EBITDA	\$ 446	\$ 381	\$ 390	\$ 391	\$ 404	\$ 375	\$ 366	\$ 362
Amortization of deferred acquisition costs and other depreciation	(80)	(81)	(80)	(78)	(78)	(79)	(76)	(77)
Amortization of deferred sales commissions	(21)	(22)	(22)	(19)	(19)	(20)	(23)	(22)
Core earnings before income taxes	345	278	288	294	307	276	267	263
Core income tax (expense) recovery	(37)	(40)	(38)	(29)	(26)	(34)	(34)	(32)
Core earnings	\$ 308	\$ 238	\$ 250	\$ 265	\$ 281	\$ 242	\$ 233	\$ 231
Core EBITDA	\$ 446	\$ 381	\$ 390	\$ 391	\$ 404	\$ 375	\$ 366	\$ 362
Revenue	\$ 1,465	\$ 1,361	\$ 1,426	\$ 1,433	\$ 1,409	\$ 1,395	\$ 1,358	\$ 1,371
Core EBITDA Margin	30.4%	28.0%	27.3%	27.3%	28.7%	26.9%	27.0%	26.4%

Expense efficiency ratio is a non-GAAP measure which Manulife uses to measure progress towards our target to be more efficient. Efficiency ratio is defined as pre-tax general expenses included in core earnings (“core general expenses”) divided by the sum of core earnings before income taxes (“pre-tax core earnings”) and pre-tax core general expenses.

Embedded value (“EV”) is a measure of the present value of shareholders’ interests in the expected future distributable earnings on in-force business reflected in the Consolidated Statements of Financial Position of Manulife, excluding any value associated with future new business. EV is calculated as the sum of the adjusted net worth and the value of in-force business. The adjusted net worth is the IFRS shareholders’ equity adjusted for goodwill and intangibles, fair value of surplus assets, the carrying value of debt and preferred shares, and local statutory balance sheet, regulatory reserve, and capital for Manulife’s Asian business. The value of in-force business in Canada and the U.S. is the present value of expected future IFRS earnings on in-force business less the present value of the cost of holding capital to support the in-force business under the LICAT

framework. The value of in-force business in Asia reflects local statutory earnings and capital requirements. The value of in-force excludes our Global WAM, Manulife Bank and Property and Casualty Reinsurance businesses.

New business value (“NBV”) is the change in embedded value as a result of sales in the reporting period. NBV is calculated as the present value of shareholders’ interests in expected future distributable earnings, after the cost of capital, on actual new business sold in the period using assumptions that are consistent with the assumptions used in the calculation of embedded value. NBV excludes businesses with immaterial insurance risks, such as the Company’s Global WAM, Manulife Bank and the short-term Property and Casualty Reinsurance businesses. NBV is a useful metric to evaluate the value created by the Company’s new business franchise.

New business value margin (“NBV margin”) is calculated as NBV divided by APE excluding non-controlling interests. APE is calculated as 100% of annualized first year premiums for recurring premium products, and as 10% of single premiums for single premium products. Both NBV and APE used in the NBV margin calculation are after non-controlling interests and exclude our Global WAM, Manulife Bank and Property and Casualty Reinsurance businesses. NBV margin is a useful metric to help understand the profitability of our new business.

Sales are measured according to product type:

For individual insurance, sales include 100% of new annualized premiums and 10% of both excess and single premiums. For individual insurance, new annualized premiums reflect the annualized premium expected in the first year of a policy that requires premium payments for more than one year. Single premium is the lump sum premium from the sale of a single premium product, e.g. travel insurance. Sales are reported gross before the impact of reinsurance.

For group insurance, sales include new annualized premiums and administrative services only premium equivalents on new cases, as well as the addition of new coverages and amendments to contracts, excluding rate increases.

APE sales are comprised of 100% of regular premiums/deposits and 10% of single premiums/deposits for both insurance and insurance-based wealth accumulation products.

Insurance-based wealth accumulation product sales include all new deposits into variable and fixed annuity contracts. As we discontinued sales of new Variable Annuity contracts in the U.S. in 1Q13, subsequent deposits into existing U.S. Variable Annuity contracts are not reported as sales. Asia variable annuity deposits are included in APE sales.

Bank new lending volumes include bank loans and mortgages authorized in the period.

Gross flows is a new business measure presented for our Global WAM business and includes all deposits into mutual funds, college savings 529 plans, group pension/retirement savings products, private wealth and institutional asset management products. Gross flows is a common industry metric for WAM businesses as it provides a measure of how successful the businesses are at attracting assets.

Net flows is presented for our Global WAM business and includes gross flows less redemptions for mutual funds, college savings 529 plans, group pension/retirement savings products, private wealth and institutional asset management products. Net flows is a common industry metric for WAM businesses as it provides a measure of how successful the businesses are at attracting and retaining assets. When gross flows exceed redemptions, net flows will be positive and will be referred to as net inflows. Conversely, when redemptions exceed gross flows, net flows will be negative and will be referred to as net outflows.

E4 Caution regarding forward-looking statements

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

The forward-looking statements in this document include, but are not limited to, statements with respect to our business continuity plans and measures implemented in response to the COVID-19 pandemic and its expected impact on our businesses, operations, earnings and results, our expense efficiency program and, also related 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”, “outlook”, “expect”, “intend”, “estimate”, “anticipate”, “believe”, “plan”, “forecast”, “objective”, “seek”, “aim”, “continue”, “goal”, and “restore” (or the negative thereof) and words and expressions of similar import, and include statements concerning possible or assumed future results. Although we believe that the expectations reflected in such forward-looking statements are reasonable, such statements involve risks and uncertainties, and undue reliance should not be placed on such statements and they should not be interpreted as confirming market or analysts’ expectations in any way.

Certain material factors or assumptions are applied in making forward-looking statements and actual results may differ materially from those expressed or implied in such statements. Important factors that could cause actual results to differ materially from expectations include but are not limited to: general business and economic conditions (including but not limited to the performance, volatility and correlation of equity markets, interest rates, credit and swap spreads, currency rates, investment losses and defaults, market liquidity and creditworthiness of guarantors, reinsurers and counterparties); the severity, duration and spread of the COVID-19 outbreak, as well as actions that have been, or may be taken by governmental authorities to contain COVID-19 or to treat its impact; changes in laws and regulations; changes in accounting standards applicable in any of the territories in which we operate; changes in regulatory capital requirements; our ability to execute strategic plans and changes to strategic plans; downgrades in our financial strength or credit ratings; our ability to maintain our reputation; impairments of goodwill or intangible assets or the establishment of provisions against future tax assets; the accuracy of estimates relating to morbidity, mortality and policyholder behaviour; the accuracy of other estimates used in applying accounting policies, actuarial methods and embedded value methods; our ability to implement effective hedging strategies and unforeseen consequences arising from such strategies; our ability to source appropriate assets to back our long-dated liabilities; level of competition and consolidation; our ability to market and distribute products through current and future distribution channels; 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; our ability to protect our intellectual property and exposure to claims of infringement; and our inability to withdraw cash from subsidiaries.

Additional information about material risk factors that could cause actual results to differ materially from expectations and about material factors or assumptions applied in making forward-looking statements may be found in this document under "Risk Management and Risk Factors Update" and "Critical Actuarial and Accounting Policies", under "Risk Management", "Risk Factors" and "Critical Actuarial and Accounting Policies" in the Management's Discussion and Analysis in our most recent annual report and, in the "Risk Management" note to the consolidated financial statements in our most recent annual and interim reports and elsewhere in our filings with Canadian and U.S. securities regulators.

The forward-looking statements in this document are, unless otherwise indicated, stated as of the date hereof and are presented for the purpose of assisting investors and others in understanding our financial position and results of operations, our future operations, as well as our objectives and strategic priorities, and may not be appropriate for other purposes. We do not undertake to update any forward-looking statements, except as required by law.

E5 Quarterly financial information

The following table provides summary information related to our eight most recently completed quarters.

As at and for the three months ended (\$ millions, except per share amounts or otherwise stated, unaudited)	Sept 30, 2020	Jun 30, 2020	Mar 31, 2020	Dec 31, 2019	Sept 30, 2019	Jun 30, 2019	Mar 31, 2019	Dec 31, 2018
Revenue								
Premium income								
Life and health insurance ⁽¹⁾	\$ 5,302	\$ 7,560	\$ 8,454	\$ 8,373	\$ 8,309	\$ 7,696	\$ 8,077	\$ 7,724
Annuities and pensions ⁽²⁾	704	673	901	865	1,026	995	237	(5,892)
Net premium income	6,006	8,233	9,355	9,238	9,335	8,691	8,314	1,832
Investment income	3,521	5,262	3,284	4,004	3,932	3,710	3,747	3,278
Realized and unrealized gains and losses on assets supporting insurance and investment contract liabilities ⁽³⁾	1,100	11,626	4,558	(4,503)	6,592	7,185	8,926	1,113
Other revenue	2,749	2,365	2,980	2,433	2,770	2,634	2,562	2,291
Total revenue	\$ 13,376	\$ 27,486	\$ 20,177	\$ 11,172	\$ 22,629	\$ 22,220	\$ 23,549	\$ 8,514
Income (loss) before income taxes	\$ 2,170	\$ 832	\$ 1,704	\$ 1,225	\$ 715	\$ 1,756	\$ 2,524	\$ 359
Income tax (expense) recovery	(381)	7	(597)	(89)	(100)	(240)	(289)	(43)
Net income (loss)	\$ 1,789	\$ 839	\$ 1,107	\$ 1,136	\$ 615	\$ 1,516	\$ 2,235	\$ 316
Net income (loss) attributed to shareholders	\$ 2,068	\$ 727	\$ 1,296	\$ 1,228	\$ 723	\$ 1,475	\$ 2,176	\$ 593
Reconciliation of core earnings to net income attributed to shareholders								
Total core earnings ⁽⁴⁾	\$ 1,453	\$ 1,561	\$ 1,028	\$ 1,477	\$ 1,527	\$ 1,452	\$ 1,548	\$ 1,337
Other items to reconcile net income attributed to shareholders to core earnings ⁽⁵⁾ :								
Investment-related experience outside of core earnings	147	(916)	(608)	182	(289)	146	327	(130)
Direct impact of equity markets, interest rates and variable annuity guarantee liabilities	390	73	792	(389)	(494)	(144)	249	(675)
Change in actuarial methods and assumptions	(198)	-	-	-	(21)	-	-	-
Reinsurance transactions	276	9	12	(34)	-	63	52	142
Restructuring charge	-	-	-	-	-	-	-	(63)
Tax-related items and other	-	-	72	(8)	-	(42)	-	(18)
Net income (loss) attributed to shareholders	\$ 2,068	\$ 727	\$ 1,296	\$ 1,228	\$ 723	\$ 1,475	\$ 2,176	\$ 593
Basic earnings (loss) per common share	\$ 1.04	\$ 0.35	\$ 0.64	\$ 0.61	\$ 0.35	\$ 0.73	\$ 1.09	\$ 0.28
Diluted earnings (loss) per common share	\$ 1.04	\$ 0.35	\$ 0.64	\$ 0.61	\$ 0.35	\$ 0.73	\$ 1.08	\$ 0.28
Segregated funds deposits	\$ 9,158	\$ 8,784	\$ 11,215	\$ 9,417	\$ 9,160	\$ 9,398	\$ 10,586	\$ 9,212
Total assets (in billions)	\$ 876	\$ 866	\$ 831	\$ 809	\$ 812	\$ 790	\$ 780	\$ 750
Weighted average common shares (in millions)	1,940	1,939	1,943	1,948	1,961	1,965	1,965	1,980
Diluted weighted average common shares (in millions)	1,942	1,941	1,947	1,953	1,965	1,969	1,969	1,983
Dividends per common share	\$ 0.280	\$ 0.280	\$ 0.280	\$ 0.250	\$ 0.250	\$ 0.250	\$ 0.250	\$ 0.250
CDN\$ to US\$1 - Statement of Financial Position	1.3339	1.3628	1.4187	1.2988	1.3243	1.3087	1.3363	1.3642
CDN\$ to US\$1 - Statement of Income	1.3321	1.3854	1.3449	1.3200	1.3204	1.3377	1.3295	1.3204

(1) Includes ceded premiums related to the reinsurance of a block of our legacy U.S. Bank-Owned Life Insurance of US\$2.4 billion in 3Q20.

(2) Includes ceded premiums related to the reinsurance of a block of our legacy U.S. payout annuities of US\$0.5 billion in 1Q19 and US\$5.3 billion in 4Q18.

(3) 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 and losses on the assets is largely offset in the change in insurance and investment contract liabilities.

(4) Core earnings is a non-GAAP measure. See "Performance and non-GAAP measures" above.

(5) For explanations of other items, see "Items excluded from core earnings" table in section A1 "Profitability" and for an operating segment split of these items see the 8 quarter trend tables in "Performance and non-GAAP measures" which reconcile net income (loss) attributed to shareholders to core earnings.

E6 Other

No changes were made in our internal control over financial reporting during the three and nine months ended September 30, 2020, that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

As in prior quarters, MFC's Audit Committee reviewed this MD&A and the unaudited interim financial report and MFC's Board of Directors approved this MD&A prior to its release.