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Report of Independent Registered Public Accounting Firm

The Board of Directors
Liberty Mutual Holding Company Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Liberty Mutual Holding Company Inc. (the Company) as of December 31, 2020 and 2019, the related consolidated statements of income, comprehensive income, changes in total equity and cash flows for each of the three years in the period ended December 31, 2020, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020 and 2019, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States) (PCAOB) and in accordance with auditing standards generally accepted in the United States of America, the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission "(2013 framework)," and our report dated February 23, 2021 expressed an unqualified opinion thereon.

Change in Method of Accounting

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for equity investments as a result of the adoption of the amendments to the FASB Accounting Standards Codification resulting from Accounting Standards Update No. 2016-01, *Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities,* effective January 1, 2019. Our opinion is not modified with respect to this matter.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are required to be independent with respect to the Company in accordance with the relevant ethical requirements relating to our audit.

We conducted our audits in accordance with the auditing standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved especially challenging, subjective or complex judgments. The communication of the critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Valuation of incurred but not reported reserves

Description of the Matter

At December 31, 2020, the liability for incurred but not reported (IBNR) reserves represented a significant portion of the $67,465 million of reserves for unpaid claims and claim adjustment expenses for property and casualty contracts. As discussed in Notes 1 and 6 to the consolidated financial statements, the carrying amount of unpaid claims and claims adjustment expenses for property and casualty contracts is management's best estimate of the ultimate liability for the cost of claims reported but not yet paid and the cost of claims not yet reported, as well as the estimated expenses necessary to settle the claims and is based upon individual case estimates for reported claims, actuarial estimates for IBNR, and estimates for costs to settle claims. IBNR reserves include a provision for unreported claims and supplemental reserves for reported claims. The estimate of the ultimate liability considers a variety of factors and assumptions, such as, litigation and medical cost trends, and economic and legal conditions. The evaluation of these factors and assumptions in determining IBNR reserves involve significant uncertainties and management judgments. In particular the significant judgment was primarily related to the selection and weighting of actuarial techniques applied to project the ultimate losses and the selection of assumptions, particularly claims frequency and severity, and settlement patterns used to determine IBNR reserves for the general liability, workers compensation, and other casualty lines of business which contain exposures that develop or are paid over a long period of time or have high potential severities.

Auditing management's best estimate of IBNR reserves was complex and involved the use of our actuarial specialists due to the significant measurement uncertainty associated with the estimation and high degree of subjectivity in management's actuarial methods and assumptions used including, selection and weighting of actuarial techniques, determination of claims frequency and severity and expected settlement patterns.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the process to estimate the IBNR reserves balance, including, among others, controls over the review and approval processes that management has in place for the methods and assumptions used in estimating the IBNR reserves.

To test the Company's estimate of IBNR reserves, our audit procedures included, among others, the assistance of our actuarial specialists to assess the actuarial methods applied which included comparing management's methods to those used in prior periods and those used in the industry for similar lines of business. To evaluate the significant assumptions used in their actuarial methods we compared the significant assumptions, including claims frequency and severity and settlement patterns, to assumptions historically used and current industry benchmarks. In addition, we independently calculated a range of reasonable reserves estimates and compared the range of reserve estimates to management's recorded reserves and performed a review of the development of prior year's estimate.

Valuation of investments in securities and natural resources assets

Description of the Matter

A subset of the Company's $71,301 million fixed-income securities portfolio and its $822 million investments in direct working interests in natural resources exhibits higher estimation uncertainty when determining fair value. Fixed-income securities are classified as available-for sale and, accordingly, are carried at fair value in the consolidated balance sheets. As discussed in Note 10 of the consolidated financial statements, for certain securities the Company obtains prices from third party valuation service providers, a subset of which exhibit higher estimation uncertainty given the characteristics of the security. In addition, for certain securities that exhibit higher estimation uncertainty, the Company utilizes broker quotes and internal pricing models to develop the fair value. As discussed in Notes 1 and 3 of the consolidated financial statements, investments in direct working interests in natural resources, including oil and gas, metals and mining, and timber and agriculture, are carried at book value in the consolidated balance sheets and are assessed for impairment on a quarterly basis. In order to conduct this assessment, the Company performs an analysis of the fair value of each asset. Fair values are developed using internal models which include various assumptions, including commodity prices, production forecasts, and discount rate, which creates higher estimation uncertainty.

Auditing the fair value of the assets that exhibit higher estimation uncertainty was especially challenging because determining the fair value is complex and highly judgmental and involves using inputs and assumptions that are not directly observable in the market.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over management's valuation process for the fixed income securities portfolio that exhibits higher estimation uncertainty and for assessing investments in natural resources for impairment. This included, among other procedures, testing the review and approval process that management has in place over validating the fair value from third party valuation service providers and the assumptions used in determining the fair value for internally priced securities and natural resources assets.

To test the fair value calculations, our audit procedures included, among others, evaluating the valuation methods used by the Company and comparing to the methods used in prior periods and those used in the industry. To test the fair value calculation for fixed-income securities, we utilized the support of our valuation specialists which included, among other procedures, independently calculating a reasonable range of fair values for a sample of securities using assumptions based on independently obtained information or available transaction data for similar securities. We compared the ranges to management's estimates of fair value for the selected securities. To test the fair value calculation supporting the impairment analysis for investments in natural resources, we utilized the support of our valuation specialists which included, among other procedures, reviewing the Company's key assumptions as noted above and cash flow projections and comparing those to independently obtained information or available transaction data for similar assets.

Ernst & Young LLP

We have served as the Company's auditor since 1996.
February 23, 2021

Liberty Mutual Insurance

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Boston, MA 02116
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Management's Report on the Effectiveness of Internal Control over Financial Reporting

The Board of Directors
Liberty Mutual Holding Company Inc.

Management of Liberty Mutual Holding Company Inc. (the Company) is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is a process designed to provide reasonable assurance to our management and Board of Directors regarding the reliability of financial reporting and the preparation of the consolidated financial statements in accordance with U.S. generally accepted accounting principles.

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

Management has assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2020, based on the framework established in Internal Control – Integrated Framework published by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2013 Framework).

Based on its assessment, management concluded that the Company's internal control over financial reporting was effective to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's consolidated financial statements as of December 31, 2020.

Ernst & Young LLP, our independent registered public accounting firm, has issued its report on the effectiveness of the Company's internal control over financial reporting, which follows this report.

David H. Long, *Chairman, President and Chief Executive Officer*

CHRIS PEIRCE

Christopher L. Peirce, *Executive Vice President and Chief Financial Officer*

ATTACHMENT A

Liberty Mutual Holding Company Inc.
Addendum to Management's Report on the Effectiveness of Internal Control over Financial Reporting
For the Year Ended December 31, 2020

For purposes of this addendum, the "Section 404 Report" means Management's Report on the Effectiveness of Internal Control over Financial Reporting and the Report of the Independent Registered Public Accounting Firm on the effectiveness of internal control over financial reporting contained in the Liberty Mutual Holding Company, Inc. (LMHC) annual financial statements. Accordingly, as required by Section 16C of the Annual Financial Reporting Model Regulation, management of LMHC hereby affirms that the only material processes with respect to the preparation of the audited statutory financial statements of the Group of insurers that were excluded from the Section 404 Report are the processes discussed below. Management of LMHC hereby affirms that all other material processes with respect to the preparation of the audited statutory financial statements of the Group of insurers were included in the Section 404 Report.

The following statutory financial reporting processes were reviewed separately from the internal controls reported by the Group of insurers in its Section 404 Report:

- Accumulation of statutory financial statements and footnotes
- Calculation of investment in affiliates
- Calculation of deferred income taxes
- Calculation of nonadmitted assets
- Calculation of Schedule F penalty
- Calculation of goodwill capacity
- Preparation of Schedule P
- Allocation of results due to pooling

Building a better
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Report of Independent Registered Public Accounting Firm

The Board of Directors
Liberty Mutual Holding Company Inc.

Opinion on Internal Control over Financial Reporting

We have audited Liberty Mutual Holding Company Inc.'s internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). In our opinion, Liberty Mutual Holding Company Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on the COSO criteria.

We also have audited, in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States) (the PCAOB) and in accordance with auditing standards generally accepted in the United States of America, the consolidated balance sheets of Liberty Mutual Holding Company Inc. as of December 31, 2020 and 2019, the related consolidated statements of income, comprehensive income, changes in total equity, and cash flows for each of the three years in the period ended December 31, 2020, and the related notes and our report dated February 23, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on the Effectiveness of Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are required to be independent with respect to the Company in accordance with the relevant ethical requirements relating to our audit.

We conducted our audit in accordance with the auditing standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

Ernst & Young LLP

February 23, 2021

LIBERTY MUTUAL HOLDING COMPANY INC.

Consolidated Statements of Income

(dollars in millions)

	Years Ended December 31,		
		Revised	
	2020	2019	2018
Revenues			
Premiums earned	$ 39,491	$ 38,964	$ 37,909
Net investment income	2,594	2,592	2,722
Fee and other revenues	921	1,229	1,084
Net realized gains (losses)	790	443	(147)
Total revenues	43,796	43,228	41,568
Claims, Benefits and Expenses			
Benefits, claims and claim adjustment expenses	28,501	28,397	26,365
Operating costs and expenses	7,304	7,096	7,129
Amortization of deferred policy acquisition costs	5,827	5,543	5,310
Interest expense	441	438	441
Interest credited to policyholders	35	38	39
Total claims, benefits and expenses	42,108	41,512	39,284
Loss on extinguishment of debt	-	(49)	(8)
Ironshore acquisition & integration costs	(18)	(28)	(86)
Restructuring costs	(626)	(70)	(94)
Unit linked life insurance	(30)	(123)	-
Income from continuing operations before income tax expense and non-controlling interest	1,014	1,446	2,096
Income tax expense	237	358	463
Consolidated net income from continuing operations	777	1,088	1,633
Discontinued operations (net of income tax benefit (expense) of $1, $13 and $(166) in 2020, 2019 and 2018 respectively)	(17)	(50)	528
Consolidated net income	760	1,038	2,161
Less: Net income attributable to non-controlling interest	2	1	1
Net income attributable to Liberty Mutual Holding Company Inc.	$ 758	$ 1,037	$ 2,160

Net Realized Gains (Losses)	2020	2019	2018
Other-than-temporary impairment losses	$ (307)	$ (229)	$ (418)
Other net realized gains	969	203	271
Valuation changes on equity investments, derivatives, other	128	469	-
Total net realized gains (losses)	$ 790	$ 443	$ (147)

See accompanying notes to the audited consolidated financial statements

LIBERTY MUTUAL HOLDING COMPANY INC.

Consolidated Statements of Comprehensive Income

(dollars in millions)

	Years Ended December 31,		
		Revised	
	2020	2019	2018
Consolidated net income	$ 760	$ 1,038	$ 2,161
Other comprehensive income (loss), net of taxes:			
Unrealized gains (losses) on securities	1,436	1,828	(2,097)
Change in pension and post retirement plans funded status	153	(9)	151
Foreign currency translation and other adjustments	(11)	-	(141)
Other comprehensive income (loss), net of taxes	1,578	1,819	(2,087)
Consolidated comprehensive income	2,338	2,857	74
Less: Comprehensive income attributable to non-controlling interest	3	1	-
Comprehensive income attributable to Liberty Mutual Holding Company Inc.	$ 2,335	$ 2,856	$ 74

See accompanying notes to the audited consolidated financial statements

Liberty Mutual Holding Company Inc.

Consolidated Balance Sheets

(dollars in millions)

	December 31,	
	2020	**Revised 2019**
Assets:		
Investments		
Fixed maturities, available for sale, at fair value (amortized cost of $67,614 and $62,720)	$ 71,301	$ 64,606
Equity securities, at fair value	2,572	2,140
Short-term investments	276	222
Commercial mortgage loans	2,219	1,981
Other investments	9,387	7,218
Total investments	85,755	76,167
Cash and cash equivalents	8,224	4,969
Premium and other receivables	14,367	13,666
Accounts receivable	3,458	4,604
Reinsurance recoverables	16,163	15,928
Deferred tax asset	-	131
Deferred acquisition costs	3,766	3,574
Goodwill	5,733	5,695
Prepaid reinsurance premiums	1,877	1,800
Other assets	6,034	7,101
Total assets	$ 145,377	$ 133,635
Liabilities:		
Unpaid claims and claim adjustment expenses and future policy benefits:		
Property and casualty	$ 67,465	$ 61,848
Life	2,108	1,947
Other policyholder funds and benefits payable	15	17
Unearned premiums	23,281	22,280
Funds held under reinsurance treaties	327	546
Short-term debt	330	-
Long-term debt	8,497	8,200
Accrued postretirement and pension benefits	3,469	3,571
Payable for investments purchased and loaned	3,410	2,006
Deferred tax liability	219	-
Other liabilities	10,299	9,601
Total liabilities	119,420	110,016
Equity:		
Unassigned equity	25,708	24,950
Accumulated other comprehensive income (loss)	218	(1,359)
Total policyholders' equity	25,926	23,591
Non-controlling interest	31	28
Total equity	25,957	23,619
Total liabilities and equity	$ 145,377	$ 133,635

See accompanying notes to the audited consolidated financial statments

LIBERTY MUTUAL HOLDING COMPANY INC.

Consolidated Statements of Changes in Total Equity

(dollars in millions)

	Unassigned Equity	Accumulated Other Comprehensive (Loss) Income	Total Policyholders' Equity	Non-Controlling Interest	Total Equity
Balance, January 1, 2018	$ 21,687	$ (1,026)	$ 20,661	$ 27	$ 20,688
Cumulative effect of adoption of ASU 2018-02 at January 1, 2018	267	(267)			
Comprehensive income (loss):					
Consolidated net income	2,160	-	2,160	1	2,161
Other comprehensive loss, net of taxes	-	(2,086)	(2,086)	(1)	(2,087)
Total comprehensive income (loss)	2,160	(2,086)	74	-	74
Balance, December 31, 2018	$ 24,114	$ (3,379)	$ 20,735	$ 27	$ 20,762
Cumulative effect of adoption of ASU 2016-01 at January 1, 2019	(201)	201	-	-	-
Comprehensive income:					
Consolidated net income	1,037	-	1,037	1	1,038
Other comprehensive income, net of taxes	-	1,819	1,819	-	1,819
Total comprehensive income	1,037	1,819	2,856	1	2,857
Balance, December 31, 2019 (Revised)	$ 24,950	$ (1,359)	$ 23,591	$ 28	$ 23,619
Comprehensive income:					
Consolidated net income	758	-	758	2	760
Other comprehensive income, net of taxes	-	1,577	1,577	1	1,578
Total comprehensive income	758	1,577	2,335	3	2,338
Balance, December 31, 2020	$ 25,708	$ 218	$ 25,926	$ 31	$ 25,957

See accompanying notes to the audited consolidated financial statements

LIBERTY MUTUAL HOLDING COMPANY INC.

Consolidated Statements of Cash Flows

(dollars in millions)

	Years Ended December 31, 2020	Revised 2019	2018
Cash flows from operating activities:			
Consolidated net income	$ 760	$ 1,038	$ 2,161
Less (loss) income from Liberty Life Assurance Company of Boston, net of tax expense	(17)	(50)	528
Income from operations excluding Liberty Life Assurance Company of Boston discontinued operations	777	1,088	1,633
Adjustments to reconcile consolidated net income to net cash provided by operating activities:			
Depreciation and amortization	824	795	774
Realized (gains) losses	(790)	(443)	147
Undistributed private equity investment gains	(719)	(569)	(804)
Premium, other receivables, and reinsurance recoverables	(2,494)	(3,282)	387
Deferred acquisition costs	(206)	(186)	(182)
Liabilities for insurance reserves	7,096	6,090	942
Taxes payable, net of deferred	42	34	427
Pension plan contributions	-	(85)	-
Other, net	1,918	35	224
Total adjustments	5,671	2,389	1,915
Net cash provided by operating activities - excluding Liberty Life Assurance Company of Boston discontinued operations	6,448	3,477	3,548
Net cash provided by operating activities - Liberty Life Assurance Company of Boston discontinued operations	-	-	227
Net cash provided by operating activities	6,448	3,477	3,775
Cash flows from investing activities:			
Purchases of investments	(75,601)	(66,452)	(50,617)
Sales and maturities of investments	70,710	63,400	46,642
Property and equipment purchased, net	(116)	(567)	(1,167)
Cash provided by (paid for) disposals and acquisitions	12	(75)	1,639
Other investing activities	886	375	(95)
Net cash used in investing activities - excluding Liberty Life Assurance Company of Boston discontinued operations	(4,109)	(3,319)	(3,598)
Net cash used in investing activities - Liberty Life Assurance Company of Boston discontinued operations	-	-	(529)
Net cash used in investing activities	(4,109)	(3,319)	(4,127)
Cash flows from financing activities:			
Net activity in policyholder accounts	(49)	(46)	(13)
Debt financing, net	448	(60)	(27)
Net security lending activity and other financing activities	390	(570)	751
Net cash provided by (used in) financing activities - excluding Liberty Life Assurance Company of Boston discontinued operations	789	(676)	711
Net cash used in financing activities - Liberty Life Assurance Company of Boston discontinued operations	-	-	(496)
Net cash provided by (used in) financing activities	789	(676)	215
Effect of exchange rate changes on cash - excluding Liberty Life Assurance Company of Boston discontinued operations	127	21	(22)
Effect of exchange rate changes on cash - Liberty Life Assurance Company of Boston discontinued operations	-	-	-
Effect of exchange rate changes on cash	127	21	(22)
Net increase (decrease) in cash and cash equivalents - excluding Liberty Life Assurance Company of Boston discontinued operations	3,255	(497)	639
Net decrease in cash and cash equivalents - Liberty Life Assurance Company of Boston discontinued operations	-	-	(798)
Net increase (decrease) in cash and cash equivalents	3,255	(497)	(159)
Cash and cash equivalents, beginning of year - excluding Liberty Life Assurance Company of Boston discontinued operations	4,969	5,466	4,827
Cash and cash equivalents, beginning of year - Liberty Life Assurance Company of Boston discontinued operations	-	-	798
Cash and cash equivalents, beginning of year	4,969	5,466	5,625
Cash and cash equivalents, end of period - excluding Liberty Life Assurance Company of Boston discontinued operations	8,224	4,969	5,466
Cash and cash equivalents, end of period - Liberty Life Assurance Company of Boston discontinued operations	-	-	-
Cash and cash equivalents, end of period	$ 8,224	$ 4,969	$ 5,466
Supplemental disclosure of cash flow information:			
Income taxes paid	$ 140	$ 302	$ 124

Non-cash transactions	**2020**	**2019**	**2018**
Investing activities:			
Purchase of investments	$ 927	$ -	$ -
Sale of fixed assets and other	927	-	-

(see Note 10 for further discussion)

See accompanying notes to the audited consolidated financial statements

(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying consolidated financial statements include the accounts of Liberty Mutual Holding Company Inc., entities over which the Company exercises control including majority and wholly owned subsidiaries, and variable interest entities ("VIE") when the Company is deemed the primary beneficiary (collectively "LMHC" or the "Company"). The minority ownership of consolidated affiliates is represented in equity as non-controlling interest. All material intercompany transactions and balances have been eliminated.

The accompanying consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("GAAP"). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The Company's principal estimates include (1) unpaid claims and claim adjustment expense reserves, including asbestos and environmental liability reserves and loss sensitive premium attributable to prior years, (2) reinsurance recoverables and associated uncollectible allowance, (3) fair value determination and other-than-temporary impairments of the investment portfolio and direct investments in natural resources, (4) valuation of goodwill and intangible assets, (5) deferred income tax valuation allowance, and (6) pension and postretirement benefit obligations. While the amounts included in the consolidated financial statements reflect management's best estimates and assumptions, these amounts ultimately could vary.

Nature of Operations

On January 19, 2018, the Company announced the realignment of its businesses to enhance its ability to meet the changing demands of consumer and business customers. The Company conducts substantially all of its business through two businesses: Global Retail Markets and Global Risk Solutions. A summary of each business follows:

Global Retail Markets ("GRM"), with $28,471 of revenues in 2020, combines local expertise in growth markets outside the U.S. with strong and scalable U.S. capabilities to take advantage of opportunities to grow its business globally. GRM is comprised of four segments: U.S., West, East, and Reinsurance. U.S. consists of Personal Lines and Business Lines. U.S. Personal Lines sells automobile, homeowners and other types of property and casualty insurance coverage to individuals in the United States. These products are distributed through approximately 1,900 licensed employee sales representatives, 880 licensed telesales counselors, independent agents, third-party producers, the Internet, and sponsored affinity groups. U.S. Business Lines serves small commercial customers through an operating model that combines local underwriting, market knowledge and service with the scale advantages of a national company. West sells property and casualty, health and life insurance products and services to individuals and businesses in Brazil, Colombia, Chile, Ecuador, Spain, Portugal, and Ireland. East sells property and casualty, health and life insurance products and services to individuals and businesses in Thailand, Singapore, Hong Kong, Vietnam, Malaysia, India, and China. Private passenger automobile insurance is the single largest line of business for both West and East segments. GRM Reinsurance consists of certain internal reinsurance programs.

Global Risk Solutions ("GRS"), with $13,791 of revenues in 2020, offers a wide array of property, casualty, specialty and reinsurance coverage distributed through brokers and independent agents globally. The segments for GRS are as follows: Liberty Specialty Markets, North America, Global Surety, and Other Global Risk Solutions. The Liberty Specialty Markets segment includes most GRS business outside of North America and global reinsurance. In Q1 2020, GRS combined National Insurance ("NI") and North America Specialty ("NAS") to form a single North America segment. This includes admitted and non-admitted property and casualty in North America. The Global Surety segment is a global leader providing surety guarantees to businesses ranging from multinational to local in most industry segments. The Other Global Risk Solutions segment primarily consists of internal reinsurance programs, Ironshore international entities and a large global inland marine program.

Adoption of New Accounting Standards

Effective January 1, 2019, the Company adopted the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers* ("ASU 2014-09"). ASU 2014-09 was issued to clarify the principles for recognizing revenue, however, insurance contracts and financial instrument transactions are not within the scope of this guidance. The Company's principal activities affected by the standard are related to claims servicing contracts. The Company adopted ASU 2014-09 on a modified retrospective basis. The adoption did not impact net income, but included an increase to deferred revenue with a corresponding increase to deferred costs of $40.

Effective January 1, 2019, the Company adopted the FASB issued ASU 2016-01, *Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities* ("ASU 2016-01"). ASU 2016-01 eliminates the available-for-sale balance sheet classification for equity securities and changes in unrealized gains and losses on equity securities are recognized in the statements of income (excluding those accounted for under the equity method or those that result in consolidation. The Company adopted ASU 2016-01 on a modified retrospective basis. The adoption of this guidance resulted in the reclassification of $(201) of accumulated unrealized losses related to equity securities from accumulated other comprehensive loss to unassigned equity.

Effective January 1, 2018, the Company adopted the FASB issued ASU 2018-02, *Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* ("ASU 2018-02") guidance which permits a reclassification from AOCI to retained earnings for stranded tax effects resulting from the newly enacted federal corporate tax rate from the Tax Cuts and Jobs Act of 2017 (the "Act"). The amount of the reclassification from AOCI to retained earnings is the difference between the historical corporate tax rate and the newly enacted 21% corporate tax rate on deferred tax items originally established through OCI and not net income. ASU 2018-02 allows entities to adopt in any interim or annual period for which financial statements have not yet been issued and apply the guidance either (1) in the period of adoption or (2) retrospectively to each period in which the effect of change in the tax rate is recognized. The Company applied the guidance in the period of adoption and decreased AOCI by approximately $267 and increased retained earnings by the same amount in the consolidated statements of changes in total equity as of the beginning of 2018.

The Company has not adopted any new accounting standards in 2020.

Future Adoption of New Accounting Standards

The Company will adopt the FASB issued ASU 2016-02, Leases ("ASU 2016-02"). The amendments will require a lessee to recognize a right-of-use asset and a lease liability on the balance sheet for leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the statements of income. The amendments of ASU 2016-02 are effective for nonpublic business entities for fiscal years beginning after December 15, 2021, and interim periods within fiscal years beginning after December 15, 2022. The Company is currently evaluating the impact of the adoption of ASU 2016-02. The adoption is expected to have a material impact on the Company's balance sheet.

The Company will adopt the FASB issued ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"). ASU 2016-13 replaces the current incurred loss model with an expected credit loss model, which measures credit losses on financial instruments measured at amortized cost, and will require companies to recognize an allowance for expected credit losses. In addition, ASU 2016-13 also amends the credit loss measurement guidance for available-for-sale debt securities and beneficial interests in securitized financial assets. This amendment removes certain factors to consider when determining whether credit losses should be recognized and will require companies to recognize expected credit losses through an allowance. ASU 2016-13 is effective for nonpublic business entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2022. The Company is currently evaluating the impact of the adoption of ASU 2016-13.

There are no other accounting standards not yet adopted by the Company that are expected to have a material impact on the consolidated financial statements.

Investments

Fixed maturity securities classified as available for sale are debt securities that have principal payment schedules, are held for indefinite periods of time, and are used as a part of the Company's capital strategy or sold in response to risk and reward characteristics, liquidity needs or similar economic factors. These securities are reported at fair value with changes in fair values, net of deferred income taxes, reported in accumulated other comprehensive income.

Equity securities include common equities and non-redeemable preferred stocks and are reported at quoted fair values. Changes in fair values, net of deferred income taxes, are reported in net income for the year ended December 31, 2020 and 2019 and in other comprehensive income for the year ended December 31, 2018.

Realized gains and losses on sales of investments are recognized in income using the specific identification method. The Company reviews fixed maturity securities, and other investments for impairment on a quarterly basis. Securities are reviewed for both quantitative and qualitative considerations including, but not limited to, (1) the extent of the decline in fair value below book value, (2) the duration of the decline, (3) significant adverse changes in the financial condition or near term prospects for the investment or issuer, (4) significant changes in the business climate or credit ratings of the issuer, (5) general market conditions and volatility, (6) industry factors, (7) the past impairment of the security holding or the issuer, and (8) changes in foreign exchange.

For fixed maturity securities that the Company does not intend to sell or for which it is more likely than not that the Company would not be required to sell before an anticipated recovery in value, the Company separates impairments into credit loss and non-credit loss components. The determination of the credit loss component of the impairment charge is based on the Company's best estimate of the present value of the cash flows expected to be collected from the fixed maturity security compared to its amortized cost and is reported as part of net realized gains. The non-credit component, the residual difference between the credit impairment component and the fair value, is recognized in other comprehensive income. The factors considered in making an evaluation of credit versus non-credit other-than-temporary impairments include: (1) failure of the issuer of the security to make scheduled interest or principal payments (including the payment structure of the fixed maturity security and the likelihood the issuer will be able to make payments that increase in the future), (2) performance indicators of the underlying assets in the security (including default and delinquency rates), (3) vintage, (4) geographic concentration, (5) impact of foreign exchange rates on foreign currency denominated securities, and (6) industry analyst reports, sector credit ratings and volatility of the security's fair value.

For fixed maturity securities the Company intends to sell or for which it is more likely than not that the Company will be required to sell before an anticipated recovery in value, the full amount (fair value less amortized cost) of the impairment is included in net realized gains (losses).

Upon recognizing an other-than-temporary impairment, the new cost basis of the investment is the previous amortized cost basis less the other-than-temporary impairment recognized in net realized gains. The new cost basis is not adjusted for any subsequent recoveries in fair value; however, for fixed maturity securities the difference between the new cost basis and the expected cash flows is accreted to net investment income over the remaining expected life of the investment.

Cash equivalents are short-term, highly liquid investments that are both readily convertible into known amounts of cash and so near to maturity that they present insignificant risk of changes in value due to changing interest rates. The Company's cash equivalents include debt securities purchased with maturities of three months or less at acquisition and are carried at amortized cost, which approximates fair value.

Short-term investments are debt securities with maturities at acquisition between three months and one year, are considered available for sale, and are reported at fair value with changes in fair values, net of deferred income taxes, reported in accumulated other comprehensive income.

Any VIE for which the Company is the primary beneficiary is consolidated into the Company's financial statements.

Other investments are comprised of loans, limited partnerships and other alternative investments. Loans are reported at amortized cost less an allowance for potentially uncollectible amounts. Limited partnerships and other alternative investments are reported using the equity method of accounting and, accordingly, the Company's share of earnings are included in net investment income. Due to the availability of financial statements, other alternative investments and limited partnership investment income is generally recorded on a three-month lag. The Company elects the fair value option on certain other investments and these investments are carried at fair value. Accordingly, changes in fair value are included in net investment income or net realized gains in the accompanying consolidated statements of income. Also included in other investments are equity investments in privately held businesses that are carried at fair value with changes in fair value reported in other comprehensive income.

Commercial mortgage loans are held for investment and stated at amortized cost less an allowance for loan loss for potentially uncollectible amounts.

Net investment income primarily consists of interest, dividends, and income from limited partnerships and certain other alternative investments. Interest income is recognized on an accrual basis using the effective interest method and dividend income is recognized at the ex-dividend date. Interest income for mortgage-backed fixed maturity securities is recognized using a constant effective yield based on anticipated prepayments over the economic life of the security. The mortgage-backed portfolio is accounted for under the retrospective method and prepayment assumptions are based on market expectations. When actual prepayments differ significantly from anticipated prepayments, the effective yield is recalculated to reflect actual payments to date and anticipated future payments and any resulting adjustment is included in net investment income.

Derivatives

All derivatives are recognized on the balance sheet at fair value and reported as other invested assets, other assets, or other liabilities. At the inception of the contract, the Company designates the derivative as (1) a hedge of a fair value of a recognized asset ("fair value hedge"), (2) an economic hedge ("non-designated derivative"), or (3) a cash flow hedge.

The Company participated in commodity swaps, commodity options, and foreign exchange forward contracts in 2020 and 2019, as well as participated in an equity option contract and interest rate futures in 2019. Hedge accounting was applied for certain instruments when the derivative is highly effective in offsetting the change in fair value of the hedged item. Changes in fair value were recorded in other comprehensive income. For instruments where hedge accounting was not applied changes in fair value were recorded in net realized gains (losses) on the consolidated statements of income. These derivatives were not material to the Company's financial statements.

The Company entered into interest rate-lock and swap agreements that are classified as cash flow hedges. The effective portion of the gain or loss on these instruments is reported as a component of other comprehensive income and reclassified into earnings in the same period in which the hedged items affect earnings. The Company's cash flow hedges are 100% effective and are not material to the financial statements.

The Company owns fixed maturity securities that may have call, put or conversion options embedded. These derivatives are not related to hedging and are not material to the Company's financial statements.

Net Investment Hedge Instruments

The Company has designated non-derivative foreign-currency denominated long-term debt and the related accrued interest as hedges of its net investment in certain foreign operations. Accordingly, the foreign currency translation of the debt instrument and accrued interest is recorded in accumulated other comprehensive loss, offsetting the foreign currency translation adjustment of the related net investment that is also recorded in accumulated other comprehensive loss. As of December 31, 2020, the Company had €1,750 million of outstanding long-term debt and approximately €33 million of accrued interest designated as non-derivative hedges of its net investment in certain foreign operations. As of December 31, 2020, the foreign currency translation of the debt instrument and accrued interest recorded in accumulated other comprehensive loss was a gain of $140. (See Note 7 for further discussion.)

Securities Lending

The Company participates in a securities lending program to generate additional income, whereby certain domestic fixed maturity securities and equity securities are loaned for a short period of time from the Company's portfolio to qualifying third parties via a lending agent. Terms of the agreement are for borrowers of these securities to provide collateral of at least 102% of the market value of the loaned securities. Acceptable collateral may be in the form of cash or permitted securities as outlined in the securities lending agreement. The market value of the loaned securities is monitored and additional collateral is obtained if the market value of the collateral falls below 102% of the market value of the loaned securities. Under the terms of the securities lending program, the lending agent indemnifies the Company against borrower defaults. The loaned securities remain a recorded asset of the Company; however, the Company records a liability for the amount of cash collateral held, representing its obligation to return the collateral related to the loaned securities.

(dollars in millions)

Goodwill and Intangible Assets

Goodwill is tested for impairment at least annually using either a qualitative or a quantitative process. Election of the approach can be made at the reporting unit level. As of December 31, 2020, the Company has two reporting units – Global Retail Markets and Global Risk Solutions. The reporting unit has the option to skip the qualitative test and move directly to completion of the quantitative process. The qualitative approach can be used to evaluate if there are any indicators of impairment. Through this process, the reporting unit must determine if there is indication that it is more likely than not that the fair value of the reporting unit is less than its carrying amount, including goodwill. If it is determined that there is an indication of potential impairment, the reporting unit must complete the quantitative process. The quantitative approach is a two-step process. The first step is performed to identify potential impairment and, if necessary, the second step is performed for the purpose of measuring the amount of impairment, if any. Impairment is recognized only if the carrying amount is not recoverable from the discounted cash flows using a "market" rate and is measured as the difference between the carrying amount and the implied fair value. Other changes in the carrying amount of goodwill are primarily caused by acquisitions, dispositions, and foreign currency translation adjustments. In 2020, goodwill increased by $38 driven primarily by the acquisition of the Eberle Vivian in January and LIHI International Holding Inc. ("LIHI") foreign exchange adjustments.

The Company completed a qualitative goodwill analysis in 2020 and 2019 and the Company recognized no goodwill impairments in 2020. In 2019, a goodwill impairment of $33 was recognized related to the sale of Pembroke Managing Agency Ltd.

Indefinite-lived intangible assets held by the Company are reviewed for impairment on at least an annual basis using a qualitative process. The classification of the asset as indefinite-lived is reassessed, and an impairment is recognized if the carrying amount of the asset exceeds its fair value. The Company had no material intangible asset impairments recognized in 2020. In 2019, the Company recognized a syndicate impairment of $98. In addition, $52 of syndicate capacity was included in the sale of Pembroke Managing Agency Ltd.

Intangible assets that have finite useful lives are amortized over their useful lives. The carrying amounts of intangible assets with finite useful lives are reviewed regularly for indicators of impairment in value. Impairment is recognized only if the carrying amount of the intangible asset is not recoverable from its undiscounted cash flows and is measured as the difference between the carrying amount and the fair value of the asset.

The Company has intangible assets included in other assets on the accompanying consolidated balance sheets related to AmTrust, QBE Holdings service agreement fees, Ironshore, Safeco, and Ohio Casualty Corporation ("Ohio Casualty") acquisitions that occurred in 2019, 2018, 2017, 2008, and 2007, respectively. The following table summarizes the carrying value of intangible assets the Company recognized in other assets on the consolidated balance sheets as of December 31, 2020 and 2019.

	Carrying Value December 31, 2020	Carrying Value December 31, 2019	Period (years)	Method
Safeco agency relationship	$112	$153	15	Straight-line
Ohio Casualty agency relationship	50	57	20	Straight-line
Safeco trade name	229	229	Not subject to amortization	Not subject to amortization
Ironshore trade name	53	58	15	Straight-line
Ironshore distribution channel	212	228	18-20	Straight-line
Licenses[1]	94	94	Not subject to amortization	Not subject to amortization
Ironshore value of business acquired	-	3	2	Over the life
QBE Holdings service agreement fees	19	20	6	Straight-line
AmTrust distribution channel	66	71	15-20	Straight-line
AmTrust domestic value of business acquired	-	5	1	Straight-line
AmTrust value of business acquired	6	9	12	Over the life
AmTrust trade name	2	2	15	Straight-line
AmTrust developed technology	1	2	3	Straight-line
Total intangible assets	$844	$931		

(1) Includes Safeco, Ohio Casualty and Ironshore.

The Company recognized $85, $87 and $89 of amortization expense on intangible assets related to these acquisitions for the years ended December 31, 2020, 2019, and 2018, respectively. Amortization expense is reflected in operating costs and expenses on the accompanying consolidated statements of income. Estimated amortization expense is expected to be $75, $75, $63, $30 and $28 for the years ended December 31, 2021 through 2025, respectively. The intangible assets above are net of accumulated amortization of $820 and $735 as of December 31, 2020 and 2019, respectively.

Deferred Acquisition Costs

Costs that are directly related to the successful acquisition or renewal of insurance contracts are deferred and amortized over the respective policy terms. All other acquisition related costs, including market research, training, administration, unsuccessful acquisition or renewal efforts, and product development are charged to expense as incurred. For short-duration contracts, acquisition costs include commissions, underwriting expenses and premium taxes. For long-duration insurance contracts, these costs include first year commissions in excess of annual renewal commissions and variable sales and underwriting expenses. Deferred acquisition costs are reviewed annually for recoverability. Investment income is considered in the recoverability assessment.

For short-duration contracts, acquisition costs are amortized in proportion to earned premiums. For traditional long-duration contracts, acquisition costs are amortized over the premium paying period of the related policies using assumptions consistent with those used in computing policy benefit reserves. For universal life insurance and investment products, acquisition costs are amortized in relation to expected gross profits.

For long-duration contracts, to the extent unrealized gains or losses on fixed income securities carried at fair value would result in an adjustment of estimated gross profits had those gains or losses actually been realized, the related impact on unamortized deferred acquisition costs is recorded net of tax as a change in unrealized gains or losses and included in accumulated other comprehensive income.

Real Estate and Other Fixed Assets

The costs of buildings, furniture, and equipment are depreciated, principally on a straight-line basis, over their estimated useful lives (a maximum of 39.5 years for buildings, 10 years for furniture, and 3-5 years for equipment). Expenditures for maintenance and repairs are charged to income as incurred while expenditures for improvements are capitalized and depreciated.

Oil and Gas Properties

Oil and gas properties are accounted for using the successful efforts method whereby only costs (including lease acquisition and intangible drilling costs) associated with exploration efforts that result in the discovery of proved reserves are capitalized. Costs of acquiring and exploring unproved oil and gas leases are initially capitalized pending the results of exploration activities. Capitalized costs of producing oil and gas properties are depreciated and depleted on a field-by-field basis. The Company uses the unit-of-production method to deplete its properties and the calculation is based on units of proved developed reserves as estimated by independent petroleum engineers. Significant processing and pipeline assets are depreciated over a fixed period using the straight line method.

The Company records impairment losses on proved oil and gas properties when events and circumstances indicate the properties are impaired and the estimated undiscounted cash flows expected to be generated by those properties are less than the carrying amounts of those assets. Unproved properties are assessed at least annually to determine whether impairment has occurred. Appropriate adjustments to the costs of unproved properties are made when necessary and are included in realized gains (losses) on the consolidated statements of income. Impairment is assessed on a field-by-field basis. On July 19, 2020, the Company entered into an agreement with an investment firm, whereby both parties contributed various energy assets into a new joint venture vehicle. The Company contributed its entire interest in Liberty Energy, LLC to the joint venture in exchange for a minority interest in the new entity ("Liberty Energy, LLC transaction"). As a result, the Company is no longer required to review its oil and gas properties for impairment. (See Note 10 for further discussion.)

Insurance Liabilities and Reserves

For short-duration contracts, the Company establishes reserves for unpaid claims and claim adjustment expenses covering events that occurred in 2020 and prior years. These reserves reflect estimates of the total cost of claims reported but not yet paid and the cost of claims not yet reported, as well as the estimated expenses necessary to settle the claims. Reserve estimates are based on past loss experience modified for current claim trends, as well as prevailing social, economic and legal conditions. Final claim payments, however, may ultimately differ from the established reserves, since these payments might not occur for several years. Reserve estimates are continually reviewed and updated, and any resulting adjustments are reflected in current operating results. The Company does not discount reserves other than discounting on the long-term indemnity portion of workers compensation settled claims, the long-term disability portion of group accident and health claims as permitted by insurance regulations in certain states, the long-term portion of certain workers compensation claims of foreign subsidiaries, reserves related to periodic payment orders on certain automobile policies and specific asbestos structured settlements. Reserves are reduced for estimated amounts of salvage and subrogation and deductibles recoverable from policyholders. The Company discounts the long-term indemnity portion of workers compensation claims at risk-free discount rates determined by reference to the U.S. Treasury yield curve. The weighted average discount rates were 4.8%, 5.4%, and 5.4% for 2020, 2019, and 2018, respectively. The held discounted reserves on these unpaid workers compensation claims, net of all reinsurance, as of December 31, 2020, 2019 and 2018 were $937, $977, and $1,214 respectively.

For long-duration contracts, measurement of liabilities is based on generally accepted actuarial techniques and requires assumptions about mortality, lapse rates, and assumptions about future returns on related investments. Annuity and structured settlement contracts without significant mortality or morbidity risk are accounted for as investment contracts, whereby the premium received plus interest credited less policyholder withdrawals represents the investment contract liability. Implied credited interest rates for foreign structured settlement contracts in force were between 1.0% and 6.0% for each of the years ending December 31, 2020 and 2019. Credited rates for foreign universal life contracts in force were between 0.0% and 6.0% for each of the years ending December 31, 2020 and 2019. Liabilities for future policy benefits for traditional life policies have been computed using the net level premium method based upon estimated future investment yields (between 2.5% and 6% in 2020 and 2019), mortality assumptions (based on the Company's experience relative to standard industry mortality tables) and withdrawal assumptions (based on the Company's experience).

Policyholder Dividends

Policyholder dividends are accrued using an estimate of the ultimate amount to be paid in relation to premiums earned based on the related insurance policies.

For domestic property-casualty insurance, certain insurance contracts, primarily workers compensation policies, are issued with dividend plans to be paid subject to approval by the insurer's board of directors. The premium related to such policies approximated 0.3% of domestic property-casualty insurance premiums written for each of the years ended December 31, 2020, 2019, and 2018, respectively. Additionally, certain jurisdictions impose excess profits taxes, which limit the profitability of particular lines of business, and any excess is returned to the policyholder in the form of a dividend.

For life insurance, dividends to participating policyholders are calculated as the sum of the difference between the assumed mortality, interest and loading, and the actual experience of the Company. As a result of statutory regulations, the major portion of earnings from participating policies inures to the benefit of the participating policyholders and is excluded from consolidated net income and total equity.

Guaranty Funds

Liabilities for guaranty fund and other insurance-related assessments are accrued when an assessment is probable, when it can be reasonably estimated, and when the event obligating the entity to pay an imposed or probable assessment has occurred. The liabilities for guaranty fund assessments are based on preceding year premium or multiple year's premiums depending upon the state law. Additionally, for those states that have loss-based assessments, liabilities for workers' compensation loss based assessments are reserved based on workers' compensation loss reserves and workers' compensation paid losses. Liabilities for guaranty funds and other insurance-related assessments are not discounted and are included as part of other liabilities in the accompanying consolidated balance sheets. As of December 31, 2020 and 2019, the liability balance was $88 and $87, respectively. As of December 31, 2020 and 2019, included in other assets were $2 and $3, respectively, of related assets for premium tax offsets or policy surcharges. The related asset is limited to the amount that is determined based on future premium collections or policy surcharges from policies in force. Current Guaranty Fund Association assessments are expected to be paid over one year while loss-based assessments are expected to be paid over a period ranging from one year to the life expectancy of certain workers' compensation claimants and the recoveries are expected to occur over the same period of time. Premium tax offsets are expected to be realized within one year.

Long-Term Incentive and Performance Based Incentive Plans

The Company maintains short-term and long-term incentive compensation plans. Long-term plans vest over the requisite service period, are based upon notional units and are accounted for under ASC 718, *Compensation – Stock Compensation,* using the intrinsic value method. Additionally, the Company provides performance based incentive compensation to the majority of employees meeting the participation requirements of the respective plans. Compensation cost related to these plans is determined in accordance with plan formulas and recorded over the years the employee service is provided.

Revenue Recognition

For short-duration insurance contracts, premiums are reported as earned income generally on a pro-rata basis over the terms of the related policies. For retrospectively rated policies and contracts, premium estimates are continually reviewed and updated and any resulting adjustments are reflected in current operating results. For traditional long-duration insurance contracts (including term and whole life contracts and annuities), premiums are earned when due. For loss portfolio transfers, premiums are fully recognized as written and earned at contract inception. For annuities and structured settlements without significant mortality or morbidity risk (investment contracts) and universal life contracts (long-duration contracts with terms that are not fixed or guaranteed), revenues represent investment income earned on the related assets. Universal life and annuity contract revenues also include mortality, surrender, and administrative fees charged to policyholders.

Reinsurance

All assets and liabilities related to ceded reinsurance contracts are reported on a gross basis in the accompanying consolidated balance sheets. Prospective reinsurance premiums, claims, and claim adjustment expenses are accounted for on a basis consistent with the terms of the reinsured contracts. The accompanying consolidated statements of income reflect premiums, benefits, and settlement expenses net of reinsurance ceded.

Transactions that do not transfer risk are included in other assets or other liabilities. Ceded transactions that transfer risk but are retroactive are included in reinsurance recoverables. The excess of estimated liabilities for claims and claim costs over the consideration paid net of experience adjustments is established as a deferred credit at inception. The deferred amounts are subsequently amortized using the effective interest method over the expected settlement period. The periodic amortization is reflected in the accompanying consolidated statements of income through benefits, claims and claim adjustment expenses. In transactions where the consideration paid exceeds the estimated liabilities for claims and claim costs a loss is recognized. If the adverse development net of experience adjustments exceeds the original loss, deferred gains are recorded. The deferred gains are subsequently recognized into earnings over the expected settlement period of the reserves. In transactions involving an acquisition whereas a reinsurance contract is entered into contemporaneously with the acquisition, the contract is accounted for as prospective reinsurance.

Amounts recoverable from reinsurers include unpaid losses estimated in a manner consistent with the claim liabilities associated with the reinsured business. The Company evaluates reinsurance collectability, and a provision for uncollectible reinsurance is recorded where necessary.

Translation of Foreign Currencies

The Company translates the financial statements of its foreign operations into U.S. dollars from the functional currency designated for each foreign unit, generally the currency of the primary economic environment in which that operation does its business. Assets and liabilities are translated into U.S. dollars at period-end exchange rates, while income and expenses are translated using average rates for the period. Translation adjustments are recorded as a separate component of accumulated other comprehensive income, net of tax, to the extent applicable. Foreign currency amounts are re-measured to the functional currency, and the resulting foreign exchange gains or losses are reflected in earnings.

Income Taxes

The income tax provision is calculated under the liability method of accounting. The Company recognizes deferred income tax assets and liabilities for the expected future tax effects attributable to temporary differences between the financial statement and tax return bases of assets and liabilities based on enacted tax rates and other provisions of the tax law. The effect of a change in tax laws or rates on deferred tax assets and liabilities is recognized in income in the period in which such change is enacted. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that all or some portion of the deferred tax assets will not be realized.

(dollars in millions)

No additional income taxes have been provided for any remaining undistributed foreign earnings not subject to the transition tax or any additional outside basis differences as these amounts continue to be indefinitely reinvested. Determining the amount of unrecognized deferred tax liability related to any remaining undistributed foreign earnings not subject to the transition tax or additional outside basis differences is not practicable.

As of December 31, 2020, the U.S. Treasury Department and the Internal Revenue Service ("IRS") are still in the process of issuing various regulations in accordance with the Act. Accordingly, future adjustments to the financial statements may be necessary as regulations are issued and the 2020 tax returns are filed with the IRS and foreign tax authorities.

Global intangible low-taxed income ("GILTI") is treated by the Company as a period expense.

Fee and Other Revenues

Fee and other revenues primarily consist of revenues from the Company's energy production operations, universal life cost of insurance and administrative fees, and service fees generated from processing business for involuntary assigned risk pools, self-insured customers, and risk retention groups. Service fees are earned on a pro-rata basis over the term of the related policies. The Company accounts for oil and gas sales from its interests in producing wells under the sales method. The sales method requires that the Company recognize revenue based on the amount of natural gas and oil sold to purchasers on its behalf, which may be different from the Company's entitled production based on its interest in the properties. Fee income from service contracts are recognized as the Company completes its performance obligations, which is primarily on a pro-rata basis over the contract service period or the underlying policy periods.

Discontinued Operations

Disposal of businesses that are considered strategic shifts in the Company's operations are reflected as discontinued operations in the accompanying consolidated financial statements.

Accumulated Other Comprehensive Income (Loss)

Accumulated other comprehensive income (loss) consists principally of unrealized gains and losses on certain investments in debt securities, foreign currency translation adjustments, and pension and postretirement liability adjustments.

The components of accumulated other comprehensive income (loss) excluding non-controlling interest, net of related deferred acquisition costs and taxes, for the years ended December 31, 2020 and 2019 are as follows:

	As of December 31,	
	2020	**Revised 2019[(1)]**
Unrealized gains on securities	$2,651	$1,215
Foreign currency translation and other adjustments	(757)	(745)
Pension and post retirement liability funded status	(1,676)	(1,829)
Accumulated other comprehensive income (loss)	$218	$(1,359)

[(1)] December 2019 pension and postretirement liability funded status and accumulated other comprehensive loss are being restated, resulting in a $7 change to AOCI and unassigned funds (Please see note 9).

The following tables presents the changes in the components of other comprehensive income (loss) for the years ended December 31, 2020, 2019 and 2018, respectively.

Year ended December 31, 2020	**Unrealized gains on securities**	**Change in pension and post retirement plans funded status**	**Foreign currency translation and other adjustments[(1)]**	**Total**
Unrealized change arising during the period	$2,811	$(28)	$(26)	$2,757
Less: Reclassification adjustments included in consolidated net income	993	(222)	-	771
Total other comprehensive income (loss), before income tax expense (benefit)	1,818	194	(26)	1,986
Less: Income tax expense (benefit)	382	41	(15)	408
Total other comprehensive income (loss), net of income tax expense (benefit)	$1,436	$153	$(11)	$1,578

[(1)] Includes $1 of non-controlling interest

(dollars in millions)

Year ended December 31, 2019(1)(2)(3)	**Unrealized gains on securities**	**Change in pension and post retirement plans funded status(3)**	**Foreign currency translation and other adjustments**	**Total**
Unrealized change arising during the period	$2,685	$(138)	$8	$2,555
Less: Reclassification adjustments included in consolidated net income	394	(126)	(6)	262
Total other comprehensive income (loss), before income tax expense (benefit)	2,291	(12)	14	2,293
Less: Income tax expense (benefit)	463	(3)	14	474
Total other comprehensive income (loss), net of income tax expense (benefit)	$1,828	$(9)	$ -	$1,819

(1) Components of accumulated other comprehensive loss includes $267 reclassifications of certain tax effects from AOCI to retained earnings due to the impact of the Act.
(2) Components of accumulated other comprehensive loss includes $(201) reclassifications of unrealized losses related to equity securities from AOCI to unassigned equity due to the impact of ASU 2016-01. (See Note 1 for further discussion.)
(3) December 2019 pension and postretirement liability funded status and accumulated other comprehensive loss are being revised in 2020, resulting in a $7 change to AOCI and unassigned funds.

Year ended December 31, 2018(1)	**Unrealized losses on securities**	**Change in pension and post retirement plans funded status**	**Foreign currency translation and other adjustments(2)**	**Total**
Unrealized change arising during the period	$(2,706)	$32	$(139)	$(2,813)
Less: Reclassification adjustments included in consolidated net income	(72)	(159)	-	(231)
Total other comprehensive (loss) income, before income tax (benefit) expense	(2,634)	191	(139)	(2,582)
Less: Income tax (benefit) expense	(537)	40	2	(495)
Total other comprehensive (loss) income, net of income tax (benefit) expense	$(2,097)	$151	$(141)	$(2,087)

(1) Excludes $267 impact of the Act.
(2) Includes $(1) of non-controlling interest

(2) ACQUISITIONS AND DISPOSITIONS

ACQUISITIONS

AmTrust Financial Services
On April 15, 2019, the Company entered into an agreement to acquire the global surety and credit reinsurance operations of AmTrust Financial Services, including AmTrust Surety, AmTrust Insurance Spain, Nationale Borg and Nationale Borg Reinsurance. The acquisition of the US Surety business closed on May 31, 2019.

The Company completed the acquisition of Nationale Borg, Nationale Borg Reinsurance, and AmTrust Insurance Spain on October 2, 2019. The acquisition strengthened the Company's global surety and reinsurance expertise, market leadership and geographic scope.

In total, the Company recognized $100 of intangible assets and $159 of goodwill related to the US & International Surety business. For the twelve months ended December 31, 2020, the Company recognized $14 of amortization expense which is reflected in operating costs and expenses on the consolidated statements of income. Estimated amortization for the years ended December 31, 2021 through 2024 is $6, $6, $5 and $5 respectively.

DISPOSITIONS

Liberty Insurance JSC
On December 24, 2019 the Company's subsidiary, Liberty UK and Europe Holdings Limited ("UKH"), entered into an agreement to sell its entire 99.99% interest in its Russian insurance affiliate, Liberty Insurance (JSC), to PJSC Sovcombank. The transaction closed on February 6, 2020.

Venezuela Operations
On August 23, 2019, the Company completed the sale of the Venezuelan business, Seguros Caracas de Liberty Mutual, which was previously deconsolidated in 2015.

(dollars in millions)

Pembroke Managing Agency Ltd., Visionary Underwriting Agency Ltd., and Ironshore Europe

On March 14, 2019, the Company concluded a strategic review of certain operations and reached an agreement to sell its investment in Pembroke Managing Agency Ltd., Visionary Underwriting Agency Ltd., Ironshore Europe Designated Activity Company, and Ironshore Corporate Capital 3 Ltd. to Hamilton Insurance Group. The transaction closed on August 20, 2019. An immaterial loss has been recorded in net realized gains (losses) which is reflected in the accompanying consolidated statements of income.

Liberty Life Assurance Company of Boston

On January 19, 2018, the Company announced the sale of the Liberty Life Assurance Company of Boston ("LLAC"), which provides group disability, group life, individual life and annuity products, to Lincoln Financial Group. The transaction closed on May 1, 2018 resulting in a gain of approximately $412. Accordingly, for the twelve months ended December 31, 2018, the results of LLAC have been classified as discontinued operations in the consolidated statements of income.

In connection with the Company's May 2018 sale of LLAC to Lincoln Financial Group, the Company agreed, pursuant to the master transaction agreement, to indemnify Protective Life Corporation and Protective Life Insurance Company (together with certain of their respective affiliates, "Protective"), Lincoln and other parties against certain liabilities. In late 2018, Protective initiated informal discussions with the Company regarding potential indemnification claims (the "Initial Claims") and in 2019 the Company began an investigation and evaluation of such Initial Claims. This investigation is ongoing. On April 30, 2019, Protective delivered to the Company a formal demand for indemnification related to the Initial Claims and in addition, demands for indemnification including matters unrelated to the Initial Claims. The Company is in the process of investigating these claims and whether they have any merit or significant monetary value. Based on the Company's investigation to date of the claims generally, the Company has accrued a reserve of $52, net of tax, year to date December 31, 2019 presented in discontinued operations in the consolidated statements of income, which is primarily related to the Initial Claims, and may be adjusted up or down as the Company's investigation of all claims continues. The Company intends to vigorously defend all claims.

At this time, if these claims are ultimately determined to have merit and if the monetary value equal to the amount alleged to be due, the aggregate potential liability represented by the claims would not have a material adverse effect on the financial condition of the Company, although such aggregate potential liability may be material relative to the Company's results of operations for a single reporting period, depending on the facts and circumstances at such time.

In addition, the Company is engaged in the customary process of determining post-closing adjustments to the purchase price for LLAC, however, the final outcome of that process is not expected to materially change the $3,300 initial purchase price agreed in connection with the master transaction agreement. During 2020, the Company booked an additional $17, net of tax, presented in discontinued operations in the Consolidated Statements of Income to reflect a final closing balance sheet settlement related to the sale of LLAC.

The following table summarizes the amounts related to discontinued operations in the consolidated statements of income, excluding the gain on sale of LLAC, and the 2019 Initial Claims reserve and protective claim charge:

	Years Ended December 31,		
	2020	**2019**	**2018**
Revenues:			
Premiums earned	$-	$-	$724
Net investment income	-	-	269
Fee and other revenues	-	-	119
Net realized gains	-	-	5
Total revenues	$-	$-	$1,117
Claims, Benefits and Expenses:			
Benefits, claims and claim adjustment expenses	$-	$-	$753
Operating costs and expenses	-	-	164
Amortization of deferred policy acquisition costs	-	-	26
Interest credited to policyholders	-	-	79
Total claims, benefits and expenses	$-	$-	$1,022
Income before income tax expense	$-	$-	$ 95
Income tax expense	-	-	19
Net income	$-	$-	$76

(dollars in millions)

(3) INVESTMENTS

Components of Net Investment Income

	Years Ended December 31,		
	2020	**2019**	**2018**
Taxable interest income	$1,744	$1,832	$1,686
Tax-exempt interest income	158	180	182
Dividends	35	67	80
Limited partnerships, limited liability companies and other equity method investments	843	675	930
Commercial mortgage loans	86	83	75
Other investments	5	9	8
Gross investment income	2,871	2,846	2,961
Investment expenses (1)	(277)	(254)	(239)
Net investment income	$2,594	$2,592	$2,722

(1) Fees paid to external managers are included within the components of gross investment income.

Components of Net Realized Gains (Losses)

	Years Ended December 31,		
	2020	**2019**	**2018**
Fixed maturities			
Gross realized gains	$1,307	$684	$204
Gross realized losses	(314)	(290)	(340)
Equities			
Gross realized gains	303	603	29
Gross realized losses	(170)	(104)	(20)
Derivatives			
Gross realized gains	139	99	108
Gross realized losses	(153)	(198)	(104)
Other			
Gross realized gains	100	53	440
Gross realized losses	(422)	(404)	(464)
Net realized gains (losses)	$790	$443	$(147)

Included in the above realized gains are unrealized gains related to equity securities still held of $164 and $343 for the twelve months ended December 31, 2020 and 2019, respectively.

As of December 31, 2020 and 2019, other-than-temporary impairment losses recognized through accumulated other comprehensive income were $(4) and $(22), respectively.

During the years ended December 31, 2020, 2019, and 2018, the Company recorded $(307), $(229), and $(418) of impairment losses, respectively. Included in the impairment losses are impairment charges for assets measured at fair value on a non-recurring basis as well as $(231) of impairment charges related to the Liberty Energy, LLC transaction which are summarized in the following table for the years ended December 31, 2020, 2019, and 2018:

(dollars in millions)

	Years ended December 31,		
	2020	**2019**	**2018**
Natural Resources	$(237)	$(39)	$(331)
Real Estate	(14)	(70)	(41)
Software	(15)	(7)	(10)
Intangible	-	(98)	-
Other Assets	-	(6)	(4)
Total	$(266)	$(220)	$(386)

The Company tests for impairment on its natural resource investments by comparing the undiscounted cash flows expected to be generated by a project to the property's carrying value. When a property's carrying value is greater than the expected future cash flows, impairment expense is recognized to the extent that the carrying value of the property exceeds its discounted expected cash flows.

In employing the discounted cash flow method described above, key inputs regarding natural resource investments are commodity prices, locational basis difference, production, project development costs and the discount rate which are based on management's expectations about outcomes with respect to these variables. Specifically, the Company uses a long term forward price curve and applies a discount rate to the projected future cash flows. Regarding the sensitivity of the key inputs, an increase in the locational basis difference, project development costs or discount rate will lead to a decrease in fair value, and an increase in prices or production will lead to an increase in fair value.

During the years ended December 31, 2020, 2019, and 2018, proceeds from sales of fixed maturities available for sale were $59,850, $52,246, and $36,362 respectively. The gross realized gains (losses) on sales of fixed maturities available for sale totaled $1,254 and $(239) in 2020, $653 and $(267) in 2019, $184 and $(267) in 2018. During the years ended December 31, 2020, 2019, and 2018, proceeds from sales of equities were $1,789, $3,478, $906, respectively. The gross realized gains (losses) on sales of equities totaled $61 and $(66) in 2020, $121 and $(75) in 2019, and $26 and $(14) in 2018.

Components of Change in Net Unrealized Investment Gains (Losses)

	Years Ended December 31,		
	2020	**2019**	**2018**
Fixed maturities	$1,780	$2,216	$(1,816)
Equities	-	-	(409)
Other	60	94	(748)
Adjustments to deferred acquisition costs	(22)	(19)	339
Net change in unrealized investment gains (losses)	1,818	2,291	(2,634)
Less: Deferred income tax expense (benefit)	382	463	(537)
Net change in unrealized investment gains (losses), net of tax	$1,436	$1,828	$(2,097)

Available for Sale Investments

The amortized cost, gross unrealized gains and losses and fair values of available for sale investments as of December 31, 2020 and 2019, are as follows:

December 31, 2020	**Amortized Cost**	**Gross Unrealized Gains**	**Gross Unrealized Losses**	**Fair Value**
U.S. government and agency securities	$7,056	$159	$(6)	$7,209
Residential MBS(1)	5,755	206	(2)	5,959
Commercial MBS	4,407	328	(8)	4,727
Other MBS and ABS(2)	5,229	118	(35)	5,312
U.S. state and municipal	8,549	740	(2)	9,287
Corporate and other	31,876	1,957	(55)	33,778
Foreign government securities	4,742	290	(3)	5,029
Total securities available for sale	$67,614	$3,798	$(111)	$71,301

(dollars in millions)

December 31, 2019	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. government and agency securities	$9,041	$145	$(6)	$9,180
Residential MBS	6,166	105	(6)	6,265
Commercial MBS	4,410	131	(5)	4,536
Other MBS and ABS	5,134	48	(31)	5,151
U.S. state and municipal	8,429	497	(7)	8,919
Corporate and other	24,784	844	(47)	25,581
Foreign government securities	4,756	230	(12)	4,974
Total securities available for sale	$62,720	$2,000	$(114)	$64,606

(1) Mortgage-backed securities ("MBS")
(2) Asset-backed securities ("ABS")

Approximately 60% of the Company's mortgage and asset-backed fixed maturity portfolio is explicitly backed by the U.S. government (Government National Mortgage Association "GNMA" and Small Business Association "SBA") or by government-sponsored entities (Federal Home Loan Mortgage Corporation "FHLMC" and Federal National Mortgage Association "FNMA"). Approximately 82% of the holdings are rated AAA. The commercial MBS portfolio is well diversified and of high quality with approximately 91% rated AAA.

As of December 31, 2020, no single issuer, excluding U.S. Treasuries, agency securities and MBS, accounted for more than 0.8% of invested assets.

As of December 31, 2020 and 2019, the fair value of common stock associated with non-guaranteed unit linked products where the policyholder bears the investment risk were approximately $773 and $701, respectively.

As of December 31, 2020 and 2019, securities carried at $2,929 and $2,893, respectively, were on deposit with state regulatory authorities as required by law.

As of December 31, 2020 and 2019, the fair values of fixed maturity securities and equity securities loaned were approximately $1,986 and $1,758, respectively. Cash and short-term investments received as collateral in connection with the loaned securities were approximately $1,507 and $1,034 as of December 31, 2020 and 2019, respectively. Investments other than cash and short-term investments received as collateral in connection with the loaned securities were approximately $521 and $769 as of December 31, 2020 and 2019, respectively.

The amortized cost and fair value of fixed maturities as of December 31, 2020, by contractual maturity are as follows:

	Amortized Cost	Fair Value
Due to mature:		
One year or less	$2,685	$2,720
Over one year through five years	23,698	24,732
Over five years through ten years	17,640	18,790
Over ten years	8,200	9,061
MBS and ABS of government and corporate agencies	15,391	15,998
Total fixed maturities	$67,614	$71,301

Expected maturities may differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

The following tables summarize the gross unrealized losses and fair value of fixed maturity securities and equity securities by the length of time that individual securities have been in a continuous unrealized loss position as of December 31, 2020 and 2019 and that are not deemed to be other-than-temporarily impaired.

(dollars in millions)

December 31, 2020	Less Than 12 Months		12 Months or Longer	
	Unrealized Losses	Fair Value of Investments with Unrealized Losses	Unrealized Losses	Fair Value of Investments with Unrealized Losses
U.S. government and agency securities	$(6)	$797	$ -	$ -
Residential MBS	(2)	283	-	3
Commercial MBS	(5)	329	(3)	17
Other MBS and ABS	(26)	850	(9)	328
U.S. state and municipal	(2)	92	-	-
Corporate and other	(31)	1,278	(24)	282
Foreign government securities	(3)	300	-	4
Total Securities Available for Sale	$(75)	$3,929	$(36)	$634

December 31, 2019	Less Than 12 Months		12 Months or Longer	
	Unrealized Losses	Fair Value of Investments with Unrealized Losses	Unrealized Losses	Fair Value of Investments with Unrealized Losses
U.S. government and agency securities	$(5)	$949	$(1)	$152
Residential MBS	(4)	575	(2)	493
Commercial MBS	(5)	409	-	43
Other MBS and ABS	(16)	1,204	(15)	534
U.S. state and municipal	(7)	681	-	4
Corporate and other	(28)	1,715	(19)	421
Foreign government securities	(11)	769	(1)	142
Total Securities Available for Sale Total	$(76)	$6,302	$(38)	$1,789

As of December 31, 2020, there were 272 securities that were in an unrealized loss position for 12 months or longer. The Company monitors the difference between the amortized cost and estimated fair value of fixed maturity securities to ascertain whether declines in value are temporary in nature. The Company currently does not have the intent to sell and has determined it is not more likely than not that it would be required to sell these fixed maturity securities before they recover their fair value.

Variable Interest Entities

The Company invests in limited partnerships and other entities subject to VIE analysis under the VIE subsections of ASC 810, *Consolidation*. The Company analyzes each investment to determine whether it is a VIE, and if so, whether the Company is the primary beneficiary or a significant interest holder based on a qualitative and quantitative assessment. The Company evaluates the design of the entity, the risks to which the entity was designed to expose the variable interest holder and the extent of the Company's control of and variable interest in the VIE. As of December 31, 2020 and 2019, respectively, the Company has determined that it was not the primary beneficiary of any of its VIEs except for the Company's investment in its India joint venture which is deemed immaterial.

The Company has variable interests in VIEs for which it is not the primary beneficiary and accounts for these VIEs under the equity method in accordance with ASC 323, *Investments – Equity Method and Joint Ventures*. The VIEs are principally private equity limited partnerships in which the Company has invested as a passive limited partner. The partnerships were deemed to be VIEs because the equity holders as a group lack the power to direct the activities that most significantly impact the respective entity's economic performance. The VIEs generate variability primarily from investment portfolio performance and that variability is passed to equity holders. The net carrying value of non-consolidated VIEs in which the Company has a variable interest was $6,765 and $5,938 as of December 31, 2020 and 2019, respectively and the Company's maximum exposure to loss was $10,362 and $8,673 as of December 31, 2020 and 2019, respectively. The assets are included primarily in other investments in the accompanying consolidated balance sheets. Maximum exposure to loss includes the carrying value and unfunded commitment of the VIE. There is no recourse provision to the general credit of the Company for any VIE beyond the full amount of the Company's loss exposure.

LPs, LLCs and Other Equity Method Investments

As of December 31, 2020 and 2019, the carrying values of LP, LLC and other equity method investments were $8,664 and $6,811, respectively. These investments consist of traditional private equity partnerships, natural resources partnerships (primarily energy, metals and mining, and agriculture and timber), real estate partnerships, and other partnership funds and equity method investments. The Company's investments in LPs, LLCs and other equity method investments are long-term in nature. The Company believes these investments offer the potential for superior long-term returns and are appropriate in the overall context of a diversified portfolio.

Investments in Commercial Mortgage Loans

As of December 31, 2020 and 2019 the carrying values of commercial mortgage loans were $2,219 and $1,981, respectively. The carrying values reflect allowances for loan losses of $5 and $2 as of December 31, 2020 and 2019, respectively. The number of loans in the portfolio decreased from 4,090 as of December 31, 2019, to 3,717 as of December 31, 2020.

(dollars in millions)

(4) DEFERRED ACQUISITION COSTS

The following reflects the policy acquisition costs deferred for amortization against future income and related amortization charged to income:

	Years Ended December 31,		
	2020	2019	2018
Balance at beginning of year	$3,574	$3,397	$3,232
Acquisition costs deferred and other	6,019	5,720	5,475
Amortization charged to income	(5,827)	(5,543)	(5,310)
Balance at end of year	$3,766	$3,574	$3,397

(5) REINSURANCE

In the ordinary course of business, the Company assumes reinsurance and also cedes reinsurance to other insurers to reduce overall risk, including exposure to large losses and catastrophic events. The Company is also a member of various involuntary pools and associations and serves as a servicing carrier for residual market organizations.

A summary of reinsurance financial data reflected within the accompanying consolidated statements of income is presented below:

P&C	2020		2019		2018	
	Written	Earned	Written	Earned	Written	Earned
Direct	$43,014	$42,176	$43,166	$41,865	$42,454	$41,554
Assumed	3,478	3,117	2,831	2,871	2,051	1,963
Ceded	5,924	5,859	6,241	5,829	5,470	5,673
Net premiums	$40,568	$39,434	$39,756	$38,907	$39,035	$37,844

Life & Annuity	2020		2019		2018	
	Written	Earned	Written	Earned	Written	Earned
Direct	$57	$59	$62	$63	$73	$71
Assumed	1	1	1	1	-	-
Ceded	2	3	5	7	8	6
Net premiums	$56	$57	$58	$57	$65	$65

The Company reported reinsurance recoverables of $16,163 and $15,928 as of December 31, 2020 and 2019, respectively, net of allowance for doubtful accounts of $113 and $126, respectively. The following table summarizes the Company's reinsurance recoverables by reinsurers' Standard & Poor's ("S&P") rating (or the rating of any guarantor) as of December 31, 2020:

S&P Rating	Reinsurance Recoverables	Collateral Held	Net Recoverables[(1)]
AAA	$ -	$ -	$ -
AA+, AA, AA-	6,839	6,779	2,158
A+, A, A-	4,211	356	3,904
BBB+, BBB, BBB-	-	-	-
BB+ or below	-	-	-
Involuntary pools	2,811	-	2,810
Voluntary pools	196	120	191
Other[(2)]	2,219	3,004	643
Gross recoverables[(3)]	$16,276	$10,259	$9,706
Less: allowance	113		
Net recoverables	$16,163		

[(1)] Net recoverables represent gross recoverables less applicable collateral that can be specifically applied against recoverable balances.
[(2)] Includes $877 and $1,342 of reinsurance recoverables from non-rated reinsurers and captive and program business, respectively.
[(3)] Includes $1,145 and $15,131 of paid and unpaid reinsurance recoverables, respectively.

The Company remains contingently liable in the event reinsurers are unable to meet their obligations for paid and unpaid reinsurance recoverables and unearned premiums ceded under reinsurance agreements.

The reinsurance recoverables from state mandated involuntary pools and associations primarily represent the Company's servicing carrier business. As a servicing carrier, the Company retains no direct underwriting risk but instead cedes 100% of the involuntary market premium and losses back to the pool. Payment of losses is shared by the pool participants in proportion to their pool participation. Reinsurer credit risk with respect to any such involuntary pool or association is a function of the creditworthiness of all the pool participants.

Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability associated with the reinsured business. The Company evaluates and monitors the financial condition of its reinsurers under voluntary reinsurance arrangements to minimize its exposure to significant losses from reinsurer insolvencies. The Company reports its reinsurance recoverables net of an allowance for estimated uncollectible reinsurance recoverables. The allowance is based upon the Company's ongoing review of amounts outstanding, length of collection periods, changes in reinsurer credit standing and other relevant factors. Accordingly, the establishment of reinsurance recoverables and the related allowance for uncollectible reinsurance recoverables is also an inherently uncertain process involving estimates. Changes in these estimates could result in additional charges to the accompanying consolidated statements of income.

On November 5, 2019, Liberty Mutual Insurance Company ("LMIC") entered into a reinsurance transaction with National Indemnity Company ("NICO"), a subsidiary of Berkshire Hathaway Inc., on a combined aggregate excess of loss agreement for certain GRM U.S. Business Lines and GRS National Insurance workers compensation liabilities, commercial auto liability and general liability excluding umbrella and warranty ("NICO Casualty Reinsurance Transaction"). The first layer of the contract attaches at $300 below applicable held reserves at inception of $8,341 of combined aggregate reserves. The second layer of the contract provides adverse development coverage for $1,000 above a retention equal to $8,741. The contract includes a sublimit of $100 for certain general liability liabilities. At the closing of the NICO Casualty Reinsurance Transaction, but effective as of January 1, 2019, the Company ceded $300 of existing undiscounted liabilities, paid NICO total consideration of $462 and recorded a pre-tax loss of $173. This contract is accounted for on a retroactive basis.

In general terms, the covered business includes post December 31, 2018 development on: (1) certain workers compensation liabilities arising under policies on the books of the Company's GRM U.S. Business Lines and GRS National Insurance strategic business units as of December 31, 2018 as respects injuries or accidents occurring after December 31, 2013 and prior to January 1, 2019; (2) commercial auto liabilities arising under policies on the books of the Company's GRM U.S. Business Lines and GRS National Insurance strategic business units as of December 31, 2018 as respects injuries or accidents occurring prior to January 1, 2019; and (3) general liability excluding umbrella and warranty arising under policies on the books of the Company's GRM U.S. Business Lines and GRS National Insurance strategic business units as of December 31, 2018 as respects injuries or accidents occurring prior to January 1, 2019.

Since the NICO Casualty Reinsurance Transaction is accounted for as retroactive reinsurance in the Company's Consolidated Financial Statements, to the extent there is unfavorable development of losses covered by this reinsurance, an additional reinsurance benefit is recognized in the consolidated statements of income until those benefits exceed the loss on the transaction. Reinsurance benefits beyond the initial loss will be deferred and are amortized into earnings over the period when underlying claims are settled.

Subsequent to the transaction, the Company had net reserve strengthening across most lines of business. The strengthening offset the initial pre-tax loss of the NICO Casualty Reinsurance Transaction, resulting in a net contract position of zero as of December 31, 2019.

As the aggregate development on the contract has exceeded the original pre-tax loss of $173, deferred gains are now being recorded. The Company reported deferred gain amortization of $25 and zero at December 31, 2020 and 2019, respectively. As of December 31, 2020 and 2019, deferred gains were $240 and zero. Limits remaining on the contract as of December 31, 2020 were $550.

In conjunction with the Ironshore acquisition and effective May 1, 2017, the Company entered into a reinsurance transaction with NICO on a combined aggregate excess of loss agreement providing coverage for substantially all of Ironshore's reserves related to losses occurring prior to January 1, 2017. The first layer of the contract transfers $400 of held reserves at inception, for which the Company established reinsurance recoverables on the consolidated balance sheets. The second layer of the contract provides adverse development coverage for 95% of $500 above a retention equal to $3,006, minus paid losses between January 1, 2017 and May 1, 2017, which retention approximates the total held reserves on the covered business on Ironshore's opening balance sheet. The contract includes a sublimit of $277 for certain construction liability liabilities. The Company paid NICO consideration of $550, including interest accrued at the time of the settlement. The contract is accounted for on a prospective basis. Limits remaining on the contracts in total, and for construction liability liabilities, respectively, were $475 and zero as of December 31, 2020.

On July 17, 2014, LMIC entered into a reinsurance transaction with NICO on a combined aggregate excess of loss agreement for substantially all of the Company's U.S. workers compensation, asbestos and environmental liabilities (the "NICO Reinsurance Transaction"), attaching at $12,522 of combined aggregate reserves, with an aggregate limit of $6,500 and sublimits of $3,100 for asbestos and environmental liabilities and $4,507 for certain workers compensation liabilities. At the closing of the NICO Reinsurance Transaction, but effective as of January 1, 2014, the Company ceded $3,320 of existing undiscounted liabilities under this retroactive reinsurance agreement. NICO will provide $3,180 of additional aggregate adverse development reinsurance. The Company paid NICO total consideration of $3,046. With respect to the ceded asbestos and environmental business, NICO has been given authority to handle claims, subject to the Company's oversight and control. With respect to the ceded workers compensation business, the Company will continue to handle claims. The contract is accounted for on a retroactive basis.

In general terms, the covered business includes post December 31, 2013 development on: (1) asbestos and environmental liabilities arising under policies of insurance and reinsurance with effective dates prior to January 1, 2005; and (2) workers compensation liabilities arising out of policies on the books of the Company's former Commercial Insurance Strategic Business Unit as of December 31, 2013, as respects injuries or accidents occurring prior to January 1, 2014.

The Company reported the net position of the contract as a loss of $4 and $13 as of December 31, 2020 and December 31, 2019, respectively. Limits remaining on the contracts in total, and for asbestos and environmental liabilities, respectively, were $3,170 and $614 as of December 31, 2020.

In addition, the Company has an aggregate reinsurance recoverable from Nationwide Indemnity Company in the amount of $1,280 and $1,316 as of December 31, 2020 and 2019, respectively. The reinsurance recoverable is guaranteed by Nationwide Mutual Insurance Company, which has a financial strength rating of A+ from S&P. Additionally, the Company has significant reinsurance recoverable concentrations with Swiss Re Group, Everest Re Group, Munich Re Group and Alleghany Corp totaling $908, $415, $396, and $387, respectively, as of December 31, 2020, net of offsetting collateral under the contracts.

Catastrophe Exposure

The Company writes insurance and reinsurance contracts that cover catastrophic events, both natural and man-made. Although the Company purchases reinsurance to mitigate its exposure to certain catastrophic events, claims from catastrophic events could cause substantial volatility in its financial results for any fiscal year and have a material adverse effect on its financial condition.

On November 26, 2002, the Terrorism Risk Insurance Act of 2002 ("the Terrorism Act") was enacted into Federal law and established the Terrorism Risk Insurance Program ("the Program"), a temporary Federal program in the Department of the Treasury, that provided for a system of shared public and private compensation for certain insured losses resulting from acts of terrorism or war committed by or on behalf of a foreign interest. The Program was scheduled to terminate on December 31, 2005. In December 2005, the Terrorism Risk Insurance Extension Act of 2005 ("the Terrorism Extension Act") was enacted into Federal law, reauthorizing the prior program through December 31, 2007, while reducing the Federal role under the Program. In December 2007, the Terrorism Risk Insurance Program Reauthorization Act of 2007 was enacted into Federal law, extending coverage to include domestic acts of terrorism and reauthorizing the Program through December 31, 2014. In January 2015, the Terrorism Risk Insurance Program Reauthorization Act of 2015 ("the 2015 Reauthorization") was enacted into Federal law, extending the effectiveness of the Terrorism Act through December 31, 2020, while further reducing the Federal role under the program. In December 2019, the Terrorism Risk Insurance Program Reauthorization Act of 2019 ("the 2019 Reauthorization") was enacted into Federal law, further extending the effectiveness of the Terrorism Act through December 31, 2027. The five acts are hereinafter collectively referred to as "the Acts."

For a loss to be covered under the Program (subject losses), the loss must meet certain aggregate industry loss minimums and must be the result of an event that is certified as an act of terrorism by the U.S. Secretary of the Treasury. The annual aggregate industry loss minimum is $100 through 2015. The original Program excluded from participation certain of the following types of insurance: Federal crop insurance, private mortgage insurance, financial guaranty insurance, medical malpractice insurance, health or life insurance, flood insurance, and reinsurance. The Terrorism Extension Act exempted from coverage certain additional types of insurance, including commercial automobile, professional liability (other than directors and officers), surety, burglary and theft, and farm-owners multi-peril. In the case of a war declared by Congress, only workers compensation losses are covered by the Acts. The Acts generally require that all commercial property casualty insurers licensed in the United States participate in the Program. The 2015 Reauthorization increased the loss minimum by $20 annually until it reaches $200 in 2020, and will remain at that threshold thereafter until 2027 as a result of the 2019 Reauthorization. Under the 2015 Reauthorization, a participating insurer was entitled through 2015 to be reimbursed by the Federal Government for 85% of subject losses, after an insurer deductible, subject to an annual cap. Under the 2015 Reauthorization, the Federal reimbursement percentage decreases by 1% annually starting at 85% in 2016 to 80% in 2020, and will remain at that threshold thereafter until 2027 as a result of the 2019 Reauthorization. The 2019 Reauthorization did not change the program cap of $100,000 or the Company's deductible which remains at 20% of the Company's prior year earned premium for the covered lines.

The deductible for any calendar year is equal to 20% of the insurer's direct earned premiums for covered lines for the preceding calendar year. The Company's estimated deductible under the Program is $1,798 for 2021. The annual cap limits the amount of aggregate subject losses for all participating insurers to $100,000. Once subject losses have reached the $100,000 aggregate during a program year, participating insurers will not be liable under the Program for additional covered terrorism losses for that program year. The Company has had no terrorism-related losses since the Program was established. Because the interpretation of the Acts is untested, there is substantial uncertainty as to how they will be applied to specific circumstances. It is also possible that future legislative action could change the Acts. Further, given the unpredictable frequency and severity of terrorism losses, as well as the limited terrorism coverage in the Company's own reinsurance program, future losses from acts of terrorism, particularly "unconventional" acts of terrorism involving nuclear, biological, chemical or radiological events, could be material to the Company's operating results, financial position and/or liquidity in future periods. The Company will continue to manage this type of catastrophic risk by monitoring and controlling terrorism risk aggregations to the best of its ability.

Catastrophes

Catastrophes are an inherent risk of the property-casualty insurance business and have contributed to material period-to-period fluctuations in the Company's results of operations and financial position. Catastrophe losses are severe losses resulting from natural and man-made events, including risks such as fire, earthquake, windstorm, explosion, terrorism, and other similar events. The extent of losses from a catastrophe is a function of both the total amount of insured exposure in an area affected by the event and the severity of the event. The level of catastrophe losses experienced in any period cannot be predicted and can be material to the results of operations and financial position of the Company.

Non Catastrophe Reinsurance
The Company purchases facultative and treaty reinsurance protection on a per risk, per policy, per loss and/or per occurrence basis. Treaty coverage is provided on a pro rata and excess of loss basis for portions of the Company's property, marine, terrorism, energy, third party motor, cyber, financial risk, surety, aviation and casualty lines portfolios.

Catastrophe Reinsurance
The Company has property catastrophe reinsurance coverage for its domestic business and certain specialty operations including: 1) hurricanes and earthquake reinsurance covering a substantial portion of $3,300 of loss in excess of $300 of retained loss in the United States, Canada and the Caribbean, excluding certain reinsurance exposures; 2) aggregate excess of loss programs; and 3) quota share reinsurance programs. These programs are structured to meet the Company's established tolerances under its Enterprise Risk Management Program.

The Company purchases property catastrophe reinsurance coverage for the international property books to protect against international catastrophe events.

The Company purchases workers compensation catastrophe reinsurance, including coverage for its domestic commercial operations and certain specialty operations' US exposures. This program provides significant reinsurance protection in excess of $360 per occurrence retention, including coverage for terrorism events and/or losses for a single event at a single insured location in excess of $75. These contracts generally exclude acts of terrorism which are "certified" by the US government where such certified terrorism events involve the intentional use of nuclear, chemical, or biological materials.

Florida Hurricane Catastrophe Fund
The Company participates in the Florida Hurricane Catastrophe Fund ("FHCF"), a state-mandated catastrophe fund that provides reimbursement to insurers for a portion of their Florida hurricane losses. FHCF resources may be insufficient to meet the obligations of FHCF. Limits, premium and reimbursements from FHCF apply on a per company basis. If losses fall disproportionately on one insurance entity within the Company, recovery from FHCF could be less than anticipated. On June 1, 2020, the Company renewed coverage for 90% of approximately $56 excess of $22. Recoveries from FHCF inure to the sole benefit of the Company. If the Company fails to recover as anticipated from FHCF there could be an adverse effect on the Company's business, financial condition or results of operations.

(6) UNPAID CLAIMS AND CLAIM ADJUSTMENT EXPENSES

The Company establishes reserves for payment of claims and claim adjustment expenses that arise from the policies issued. As required by applicable accounting rules, no reserves are established until a loss, including a loss from a catastrophe, occurs. The Company's reserves are segmented into three major categories: reserves for reported claims (estimates made by claims adjusters); incurred but not reported claims reserves ("IBNR") representing reserves for unreported claims and supplemental reserves for reported claims; and reserves for the costs to settle claims. The Company establishes its reserves net of salvage and subrogation by line of business or coverage and year in which losses occur.

Establishing loss reserves, including loss reserves for catastrophic events that have occurred, is an estimation process. Many factors can ultimately affect the final settlement of a claim and, therefore, the necessary reserve. Changes in the law, results of litigation, medical costs, the costs of repair materials, and labor rates can all affect ultimate claim costs. In addition, time can be a critical part of reserving determinations since the longer the span between the incidence of a loss and the payment or settlement of the claim, the more variable the ultimate settlement can be. Accordingly, "short-tail" claims, such as property damage claims, tend to be easier to estimate than "long-tail" claims, such as workers compensation or general liability claims.

As information develops that varies from past experience, provides additional data, or augments data that previously was not considered sufficient for use in determining reserves, changes in the Company's estimate of ultimate liabilities may be required. The effects of these changes are reflected in current operating results.

In order to establish a reserve for IBNR claims, the actuarial teams within each of the SBUs use their experience and knowledge of the lines of business to estimate the potential future development of the incurred claims. The Company uses a number of actuarial methods and assumptions to develop an estimate of ultimate claim liabilities. Generally, these are a combination of exposure and experience based actuarial methods and review of other pertinent and available information from claims, underwriting, product and finance. Exposure based actuarial methods consider historical loss ratios and adjust for rate changes, premium and loss trends, industry trends and other information. These methods are typically used when developing an actuarial central estimate for more recent policy periods when claims data is insufficient to produce a reliable indication. As claims data becomes more reliable for a given policy period, more consideration is given to experience methods which review and monitor actual paid and reported development.

A comprehensive actuarial reserve review is performed for each product line at least once a year. The process and methods used for each product line vary depending on the circumstances and include input from claims, underwriting, product and finance. Each quarter the actuarial central estimate for each product line is reviewed and updated based upon development and presented to the reserving committee to conclude on the Company's best estimate of ultimate claim liabilities.

(dollars in millions)

Activity in property and casualty unpaid claims and claim adjustment expenses of the Company are summarized as follows:

	2020	2019	2018
Balance as of January 1	$61,848	$58,594	$59,217
Less: unpaid reinsurance recoverables(1)(4)	11,444	11,414	13,037
Net balance as of January 1	50,404	47,180	46,180
Balance attributable to acquisitions and dispositions(2)	(11)	3	(23)
Incurred attributable to:			
Current year	27,405	27,188	26,483
Prior years(3)	1,042	1,120	(165)
Discount accretion attributable to prior years	21	51	(7)
Total incurred	28,468	28,359	26,311
Paid attributable to:			
Current year	13,278	14,278	13,719
Prior years	9,855	10,873	11,213
Total paid	23,133	25,151	24,932
Amortization of deferred retroactive reinsurance gain	25	(10)	(32)
Net adjustment due to foreign exchange	401	23	(324)
Add: unpaid reinsurance recoverables(1)(4)	11,311	11,444	11,414
Balance as of December 31	$67,465	$61,848	$58,594

(1) In addition to the unpaid reinsurance recoverable balances noted above, and as a result of retroactive reinsurance agreements, the Company has recorded retroactive reinsurance recoverable balances of $3,779, $3,501 and $2,941 as of December 31, 2020, 2019, and 2018, respectively.
(2) The balance attributable to acquisitions and dispositions represents the disposition of Russian insurance affiliate. On December 24, 2019, UKH entered into an agreement to sell its entire 99.99% interest in its Russian insurance affiliate, Liberty Insurance (JSC) to PJSC Sovcombank. The transaction closed on February 6, 2020.
(3) Does not include decreases in allowance related to reinsurance recoverables due to prior year development of $(19) and $(62) as of December 31, 2019 and 2018, respectively.
(4) Includes $(11) related to Ironshore's ADC recovery adjustment as of December 31, 2020 and 2019.

In 2020, the change in incurred attributable to prior years, excluding asbestos and environmental and amortization of deferred retroactive gain, is primarily attributable to unfavorable development on the casualty, specialty, and commercial multi-peril lines of business, partially offset by favorable development in workers' compensation and homeowners. In 2019, the change in incurred attributable to prior years, excluding asbestos and environmental and amortization of deferred retroactive gain, is primarily attributable to unfavorable development in the reinsurance, specialty, and casualty lines of business.

In response to the COVID-19 pandemic, several states have passed, and other states are considering, amendments to expand Workers' Compensation coverage to ensure certain workers who contract the virus are eligible for compensation. In addition, some states are exploring legislation that may expand the coverage obligations of certain insurance policies, such as business interruption policies. The Company continues to evaluate the potential exposures, but could experience increased claims frequency and severity depending on the terms and number of states implementing such changes.

For certain commercial lines of insurance, the Company offers experience-rated insurance contracts whereby the ultimate premium is dependent upon the claims incurred. As of December 31, 2020 and 2019, the Company held $2,363 and $2,588, respectively, of unpaid claims and claim adjustment expenses related to experience-rated contracts. Premiums receivable included accrued retrospective and unbilled audit premiums of $171 and $330 as of December 31, 2020 and 2019, respectively. For the years ended December 31, 2020, 2019, and 2018, the Company recognized an increase of premium income of $301, $24, and $8 respectively, relating to prior years.

Unpaid claims and claim adjustment expenses are recorded net of anticipated salvage and subrogation of $1,183 and $1,511 as of December 31, 2020 and 2019, respectively.

As of December 31, 2020 and 2019, the reserve for unpaid claim reserves was reduced by $6,438 and $5,776 respectively, for large dollar deductibles. Large dollar deductibles billed and recoverable were $264 and $182 as of December 31, 2020 and 2019, respectively.

The following is information about incurred and paid claims development as of December 31, 2020, net of reinsurance, as well as cumulative claim frequency and the total of incurred-but-not-reported liabilities plus expected development on reported claims included within the net incurred claims amounts.

Supplementary information provided includes information about incurred and paid claims development for the years ended December 31, 2011, to 2019, and information about average historical claims duration as of December 31, 2020. Due to the composition of the Company, comprising organically grown and acquired business, there is a mixture of claim count definitions. However, these definitions have been consistently applied throughout the history shown. We have disclosed our claim count methodologies below, unless it is impracticable to do so.

(dollars in millions)

Disclosures about claim development by accident year are presented for the number of years for which claims incurred typically remain outstanding, up to 10 years.

The impact of current and prior year acquisitions and dispositions are presented on a retrospective basis.

Private Passenger Auto
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020					
	|------------*Supplemental and unaudited*---------|				Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims[(1)]
AY	**2017**	**2018**	**2019**	**2020**		
2017	8,879	8,622	8,601	8,610	356	3,933,392
2018		8,763	8,710	8,697	753	3,923,390
2019			8,810	8,704	1,278	4,109,233
2020				7,939	2,503	3,191,998
			Total	33,950		

(1) Note that 100% of claim count information is disclosed on a per occurrence basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020			
	|-------------*Supplemental and unaudited*---------|			
AY	**2017**	**2018**	**2019**	**2020**
2017	5,030	6,680	7,401	7,818
2018		4,921	6,580	7,260
2019			4,947	6,438
2020				4,087
			Total	25,603
All net outstanding liabilities prior to 2017, net of reinsurance				716
Liabilities for unpaid claims and claim adjustment expense				$9,063

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4
55.8%	18.5%	8.1%	4.8%

(dollars in millions)

GRM BI - Commercial Multiple-Peril ("CMP")
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance[2]

As of December 31, 2020

	|------*Supplemental and unaudited*------								|			
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total of incurred but not reported liabilities plus expected development on reported claims**	**Cumulative number of reported claims[1]**
2011	1,523	1,356	1,368	1,316	1,310	1,314	1,313	1,316	1,324	1,326	4	86,649
2012		1,284	1,252	1,211	1,187	1,190	1,195	1,205	1,208	1,200	44	72,348
2013			1,037	1,024	992	998	1,001	1,014	1,024	1,034	77	54,939
2014				1,066	1,028	1,028	1,026	1,024	1,045	1,056	14	50,576
2015					1,007	1,007	1,000	1,018	1,011	1,017	24	46,102
2016						1,005	974	987	986	1,012	27	43,619
2017							1,097	1,109	1,042	1,084	113	44,163
2018								1,251	1,142	1,184	191	39,734
2019									1,177	1,173	341	36,414
2020										1,294	621	29,215
									Total	$11,380		

[1] Note that 100% of claim count information is disclosed on a per occurrence basis.
[2] Prior to 2018, the US Business Lines and National Insurance businesses now reported in GRM and GRS respectively were managed under the former Commercial Insurance SBU. Accident year development was not explicitly analyzed separately between the two books of business, but rather in total from a Commercial Insurance perspective.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

As of December 31, 2020

	|------*Supplemental and unaudited*------								|	
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2011	604	880	1,014	1,128	1,215	1,259	1,283	1,302	1,310	1,316
2012		477	754	879	985	1,051	1,096	1,122	1,139	1,146
2013			333	569	687	789	854	907	933	947
2014				382	632	749	871	957	1,006	1,023
2015					362	588	718	847	917	956
2016						353	581	722	831	912
2017							395	689	798	856
2018								403	706	826
2019									374	622
2020										420
									Total	9,024
					All net outstanding liabilities prior to 2011, net of reinsurance					275
					Liabilities for unpaid claims and claim adjustment expense					$2,631

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
35.9%	23.2%	11.2%	9.7%	7.1%	3.9%	2.0%	1.4%	0.6%	0.5%

(dollars in millions)

GRS NI - Commercial Multiple-Peril ("CMP")
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance[2]

As of December 31, 2020

	Supplemental and unaudited											
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total of incurred but not reported liabilities plus expected development on reported claims**	**Cumulative number of reported claims[1]**
2011	144	181	160	185	178	177	177	177	178	178	1	21,260
2012		135	121	152	153	151	150	145	149	152	1	20,973
2013			114	120	120	111	114	106	109	111	1	8,486
2014				68	58	61	66	70	76	74	3	3,407
2015					32	33	30	32	37	37	1	2,267
2016						52	48	51	68	69	5	3,132
2017							157	157	187	178	1	3,470
2018								86	115	107	3	2,757
2019									151	150	33	3,007
2020										137	61	3,729
									Total	$1,193		

[1] Note that 100% of claim count information is disclosed on a per claimant basis.
[2] Prior to 2018, the US Business Lines and National Insurance businesses now reported in GRM and GRS respectively were managed under the former Commercial Insurance SBU. Accident year development was not explicitly analyzed separately between the two books of business, but rather in total from a Commercial Insurance perspective.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

As of December 31, 2020

	Supplemental and unaudited									
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2011	36	95	122	141	151	161	167	170	174	175
2012		27	58	90	110	123	135	140	144	147
2013			20	54	70	81	91	101	104	106
2014				33	45	49	57	61	65	70
2015					12	22	24	27	29	32
2016						17	36	41	50	60
2017							44	97	148	154
2018								23	49	86
2019									50	97
2020										45
									Total	$972
All net outstanding liabilities prior to 2011, net of reinsurance										4
Liabilities for unpaid claims and claim adjustment expense										$225

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
26.8%	26.9%	16.7%	9.7%	8.4%	6.9%	3.9%	2.1%	2.0%	0.7%

(dollars in millions)

GRM BI - Workers Compensation

(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance

As of December 31, 2020

	Supplemental and unaudited											
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020(1)**	**Total of incurred but not reported liabilities plus expected development on reported claims**	**Cumulative number of reported claims(2)**
2011	788	754	809	768	781	797	777	777	772	772	105	79,164
2012		723	686	687	709	707	685	696	689	688	150	60,788
2013			491	450	450	483	488	488	483	483	76	39,298
2014				391	384	390	407	409	403	403	41	30,453
2015					340	342	355	356	340	339	59	26,545
2016						316	324	322	299	298	47	24,846
2017							335	333	298	297	54	24,576
2018								373	650	431	58	26,051
2019									407	641	179	22,292
2020										388	202	13,613
									Total	$ 4,740		

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)
(2) Note that 100% of claim count information is disclosed on a per occurrence basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

As of December 31, 2020

	Supplemental and unaudited									
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2011	169	348	450	513	547	571	584	598	608	616
2012		146	294	378	419	449	467	479	487	493
2013			92	201	256	291	323	340	354	367
2014				71	161	214	243	261	275	289
2015					61	142	187	224	238	248
2016						58	132	170	197	213
2017							57	131	172	193
2018								61	240	292
2019									93	177
2020										71
									Total	$2,959
	All net outstanding liabilities prior to 2011, net of reinsurance									763
	Liabilities for unpaid claims and claim adjustment expense									$2,544

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
18.3%	24.3%	12.7%	7.9%	4.9%	3.1%	2.4%	2.0%	1.0%	1.0%

The aggregate amount of discount related to the time value of money deducted to derive the liabilities as of December 31, 2020 and 2019 were $83 and $86, respectively. Prior to 2018, the US Business Lines and National Insurance businesses now reported in GRM and GRS respectively were managed under the former Commercial Insurance SBU. Discount related to time value of money was not explicitly analyzed separately between the two books of business, but rather in total from a Commercial Insurance perspective. 2017 discount related to time value of money is reported in GRS NI – Workers Compensation.

The amounts of discount accretion recognized for the years ended December 31, 2020 and 2019 were $9 and $8, respectively. These amounts are included in the financial statement line item benefits, claims and claim adjustment expenses.

(dollars in millions)

GRS NI - Workers Compensation
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance(2)

	As of December 31, 2020											
	Supplemental and unaudited										Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims(2)
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020(1)**		
2011	1,877	1,968	1,938	1,908	1,889	1,864	1,877	1,852	1,843	1,819	399	302,582
2012		2,100	2,089	2,013	1,982	1,972	1,986	1,950	1,944	1,920	569	279,596
2013			1,638	1,630	1,621	1,576	1,562	1,542	1,525	1,499	570	229,245
2014				1,180	1,161	1,132	1,108	987	951	932	212	192,162
2015					1,033	1,035	1,013	870	848	839	223	167,078
2016						947	942	846	815	793	207	154,742
2017							962	914	880	882	273	156,498
2018								929	573	782	314	165,510
2019									792	678	287	174,050
2020										769	473	163,379
									Total	$10,913		

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)
(2) Note that 100% of claim count information is disclosed on a per claimant basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020									
	Supplemental and unaudited									
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2011	361	558	814	982	1,077	1,142	1,186	1,216	1,235	1,252
2012		295	654	879	998	1,075	1,130	1,163	1,180	1,192
2013			209	462	591	673	732	768	794	802
2014				159	343	452	522	561	588	608
2015					131	293	385	454	494	521
2016						126	294	387	442	476
2017							130	289	386	443
2018								121	208	295
2019									127	303
2020										94
									Total	$5,986
	All net outstanding liabilities prior to 2011, net of reinsurance									4,665
	Liabilities for unpaid claims and claim adjustment expense									$9,592

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
15.9%	18.0%	11.3%	7.2%	4.4%	3.0%	2.0%	1.0%	0.9%	0.9

The aggregate amount of discount related to the time value of money deducted to derive the liabilities as of December 31, 2020 and 2019 were $484 and $515 respectively. Prior to 2018, the US Business Lines and National Insurance businesses now reported in GRM and GRS respectively were managed under the former Commercial Insurance SBU. Discount related to time value of money was not explicitly analyzed separately between the two books of business, but rather in total from a Commercial Insurance perspective.

The amounts of discount accretion recognized for the years ended December 31, 2020 and 2019 were $48 and $51, respectively. These amounts are included in the financial statement line item benefits, claims and claim adjustment expenses.

(dollars in millions)

GRM BI - General Liability
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020											
	Supplemental and unaudited										Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims(2)
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020(1)		
2011	268	171	171	120	153	174	155	164	175	178	2	6,498
2012		202	148	82	152	161	175	194	199	199	35	4,447
2013			164	163	159	159	152	166	170	170	32	3,692
2014				168	172	144	149	157	175	159	4	3,015
2015					140	122	123	138	159	165	2	3,040
2016						140	129	125	145	151	6	2,902
2017							153	159	168	168	20	2,845
2018								206	127	128	13	3,104
2019									310	291	196	2,932
2020										307	269	2,096
									Total	1,916		

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)
(2) Note that 100% of claim count information is disclosed on a per occurrence basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020									
	Supplemental and unaudited									
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
2011	10	33	82	107	133	158	166	170	172	174
2012		9	48	84	115	136	149	158	161	162
2013			7	18	44	86	104	119	129	136
2014				5	39	59	91	131	143	148
2015					8	36	77	117	147	157
2016						7	30	86	108	131
2017							7	43	105	131
2018								14	53	81
2019									11	46
2020										12
									Total	$1,178
All net outstanding liabilities prior to 2011, net of reinsurance										195
Liabilities for unpaid claims and claim adjustment expense										$933

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5.1%	17.3%	24.2%	18.4%	15.8%	8.6%	4.4%	2.6%	1.0%	0.8%

(dollars in millions)

GRS NI - General Liability
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance(2)

	As of December 31, 2020											
	Supplemental and unaudited										Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims(2)
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020(1)		
2011	519	562	515	598	567	559	587	603	624	628	82	60,657
2012		553	524	661	574	560	544	551	555	564	37	62,424
2013			582	563	556	549	552	544	556	576	75	67,251
2014				596	576	593	591	630	644	661	138	66,973
2015					634	643	678	717	749	784	136	56,797
2016						565	575	594	674	718	155	58,535
2017							714	720	807	863	355	55,200
2018								667	389	209	435	44,636
2019									741	737	516	34,226
2020										650	587	15,984
									Total	$6,390		

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)
(2) Note that 100% of claim count information is disclosed on a per claimant basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020									
	Supplemental and unaudited									
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
2011	15	72	143	233	310	380	424	462	488	508
2012		15	65	152	249	326	387	445	477	497
2013			15	67	130	227	321	388	434	460
2014				20	73	167	297	382	441	481
2015					18	77	224	404	488	553
2016						20	84	244	364	447
2017							20	95	176	343
2018								23	(324)	(370)
2019									14	57
2020										12
									Total	$2,988
All net outstanding liabilities prior to 2011, net of reinsurance										509
Liabilities for unpaid claims and claim adjustment expense										$3,911

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
3.3%	(11.1)%	10.1%	18.2%	12.9%	10.2%	7.8%	5.5%	3.8%	3.2%

(dollars in millions)

GRS Global Specialty - Reinsurance
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance

As of December 31, 2020

	Supplemental and unaudited										
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total of incurred but not reported liabilities plus expected development on reported claims**
2011	619	739	773	760	736	733	707	666	662	661	43
2012		452	571	584	554	530	538	479	477	472	19
2013			425	544	514	490	490	467	456	452	3
2014				363	462	463	453	460	446	418	37
2015					334	439	449	454	431	432	(1)
2016						362	474	469	451	429	20
2017							682	759	704	720	(6)
2018								392	477	471	96
2019									809	838	366
2020										500	199
									Total	$5,393	

Claims count is unavailable for the line of business since underlying claim count information is not maintained by cedants and not included in cession statements.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

As of December 31, 2020

	Supplemental and unaudited									
AY	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2011	158	294	407	494	550	576	591	568	573	574
2012		73	201	326	390	434	457	435	438	443
2013			47	175	274	321	342	338	341	346
2014				49	174	261	299	306	305	308
2015					49	148	236	276	278	290
2016						48	165	223	231	248
2017							105	278	217	202
2018								75	100	123
2019									379	473
2020										271
									Total	$3,278
All net outstanding liabilities prior to 2011, net of reinsurance										113
Liabilities for unpaid claims and claim adjustment expense										$2,228

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
21.5%	21.0%	14.1%	7.6%	4.6%	2.1%	-0.3%	-0.6%	0.8%	0.3%

(dollars in millions)

GRM BI - Commercial Automobile Liability
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020											
	Supplemental and unaudited											
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020[1]	Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims[2]
2011	537	534	532	541	552	562	564	568	573	572	6	44,416
2012		511	515	461	475	511	535	537	537	538	9	40,165
2013			450	428	424	445	504	509	509	510	22	35,828
2014				422	426	438	500	524	535	539	6	34,788
2015					414	443	491	513	539	542	3	33,411
2016						469	512	526	597	607	2	33,528
2017							569	601	659	675	62	33,845
2018								628	435	377	155	30,919
2019									696	725	359	26,971
2020										538	368	14,547
									Total	$5,622		

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)
(2) Note that 100% of claim count information is disclosed on a per occurrence basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020									
	Supplemental and unaudited									
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
2011	122	248	368	454	514	546	555	564	566	566
2012		108	234	329	412	473	506	517	525	528
2013			96	194	285	368	445	471	480	485
2014				92	193	292	412	485	517	525
2015					92	193	315	453	507	526
2016						105	247	407	519	569
2017							124	285	431	517
2018								120	(4)	86
2019									71	194
2020										76
									Total	$4,072
					All net outstanding liabilities prior to 2011, net of reinsurance					72
					Liabilities for unpaid claims and claim adjustment expense					$1,622

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
18.6%	14.8%	21.2%	17.9%	11.5%	5.2%	1.7%	1.4%	0.4%	0.0%

(dollars in millions)

GRS NI - Commercial Automobile Liability
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance(2)

	As of December 31, 2020											
	Supplemental and unaudited											
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020(1)	Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims(2)
2011	286	275	282	313	347	349	350	352	353	355	3	62,680
2012		329	277	331	356	360	369	374	382	382	9	63,011
2013			315	290	305	323	357	356	370	373	8	60,405
2014				281	285	312	344	415	394	396	24	56,447
2015					279	269	313	344	353	356	11	55,351
2016						278	315	345	377	385	41	55,661
2017							411	396	407	415	57	60,662
2018								421	689	766	101	62,637
2019									527	502	208	65,348
2020										420	313	53,186
									Total	$4,350		

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)
(2) Note that 100% of claim count information is disclosed on a per claimant basis.

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

	As of December 31, 2020									
	Supplemental and unaudited									
AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
2011	48	119	191	253	300	321	337	347	348	350
2012		60	141	215	268	319	346	359	367	371
2013			46	117	189	257	318	337	352	359
2014				47	113	192	271	337	354	366
2015					43	103	185	270	316	332
2016						41	112	198	282	326
2017							45	125	212	285
2018								52	403	542
2019									83	169
2020										26
									Total	$3,126
All net outstanding liabilities prior to 2011, net of reinsurance										19
Liabilities for unpaid claims and claim adjustment expense										$1,243

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
11.6%	21.7%	20.4%	19.0%	13.9%	5.5%	3.8%	2.2%	0.7%	0.7%

(dollars in millions)

GRS Global Specialty - General Liability
(Claim counts in whole numbers)

Incurred claims and allocated claim adjustment expenses, net of reinsurance[2]

AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020[1]	Total of incurred but not reported liabilities plus expected development on reported claims	Cumulative number of reported claims
	Supplemental and unaudited									As of December 31, 2020		
2011	631	775	774	815	822	812	836	636	650	642	5	23,625
2012		1,016	1,161	1,110	1,145	1,103	1,165	1,041	1,041	1,015	14	26,945
2013			1,408	1,416	1,439	1,419	1,517	1,282	1,280	1,302	2	29,594
2014				1,508	1,520	1,460	1,523	1,297	1,292	1,271	(37)	33,488
2015					1,710	1,694	1,843	1,663	1,862	1,846	64	32,596
2016						1,519	1,671	1,571	1,748	1,831	76	33,403
2017							1,424	1,492	1,758	1,829	187	36,924
2018								1,585	1,878	2,093	562	34,359
2019									2,204	2,292	912	30,245
2020										2,667	1,137	19,611
									Total	$16,788		

[1] Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)

Cumulative paid claims and allocated claim adjustment expenses, net of reinsurance

AY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
	Supplemental and unaudited									As of December 31, 2020
2011	32	118	237	391	537	632	671	520	549	571
2012		80	279	388	569	687	806	699	744	776
2013			185	390	611	822	1,018	928	992	1,035
2014				111	300	533	706	768	885	954
2015					180	401	657	786	973	1,161
2016						167	400	584	732	938
2017							127	446	607	916
2018								132	324	663
2019									438	718
2020										209
									Total	$7,941
All net outstanding liabilities prior to 2011, net of reinsurance										793
Liabilities for unpaid claims and claim adjustment expense										$9,640

Average annual percentage payout of incurred claims (*Supplemental and unaudited*)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
9.5%	14.1%	14.2%	14.8%	12.6%	7.8%	1.5%	-5.2%	3.8%	3.4%

(dollars in millions)

Reconciliation of the Disclosure of Incurred and Paid Claims Development to the Liability for Unpaid Claims and Claim Adjustment Expenses ("CAE")

Net outstanding liabilities for unpaid claims and CAE[1]	**December 31, 2020**
Private Passenger Auto	9,063
GRM BI – Commercial Multiple-Peril	2,631
GRS NI – Commercial Multiple-Peril	225
GRM BI – Workers Compensation	2,544
GRS NI – Workers Compensation	9,592
GRM BI – Commercial Automobile Liability	1,622
GRS NI – Commercial Automobile Liability	1,243
GRM BI – General Liability	933
GRS NI – General Liability	3,911
GRS Global Specialty – General Liability	9,640
GRS Global Specialty – Reinsurance	2,228
Other Insurance Lines	11,056
Liabilities for unpaid claims and allocated CAE, net of reinsurance	$ 54,688
Reinsurance recoverable on unpaid claims	
Private Passenger Auto	913
GRM BI – Commercial Multiple-Peril	4
GRS NI – Commercial Multiple-Peril	15
GRM BI – Workers Compensation	243
GRS NI – Workers Compensation	2,850
GRM BI – Commercial Automobile Liability	62
GRS NI – Commercial Automobile Liability	202
GRM BI – General Liability	6
GRS NI – General Liability	590
GRS Global Specialty – General Liability	2,108
GRS Global Specialty – Reinsurance	(57)
Other Insurance Lines	4,329
Total reinsurance recoverable on unpaid claims	$ 11,265
Unallocated claims adjustment expenses	2,172
Impact of discounting	(660)
Total gross liability for unpaid claims and CAE	$ 67,465

(1) Gross of retroactive reinsurance recoverable of $4,357 for all lines of business. (See Note 5 for further discussion)

Asbestos and Environmental Reserves

The Company has exposure to asbestos and environmental claims that emanate principally from general liability policies written prior to the mid-1980s. In establishing the Company's asbestos and environmental reserves, the Company estimates case reserves for anticipated losses and bulk reserves for claim adjustment expenses and IBNR. The Company maintained casualty excess of loss reinsurance during the relevant periods. The reserves, including cessions reported by ceding reinsurers on assumed reinsurance contracts, are reported in unpaid claims and claim adjustment expenses, and ceded reserves are included in reinsurance recoverables on the accompanying consolidated balance sheets.

Upon their de-affiliation from the Nationwide Group and affiliation with the Company, Employers Insurance Company of Wausau ("EICOW"), Wausau Business Insurance Company ("WBIC"), Wausau General Insurance Company ("WGIC"), and Wausau Underwriters Insurance Company ("WUIC") entered into ceded reinsurance contracts whereby Nationwide Indemnity Company assumed full responsibility for obligations on certain policies with effective dates prior to January 1, 1986, including all asbestos and environmental exposures.

The process of establishing reserves for asbestos and environmental claims is subject to greater uncertainty than the establishment of reserves for liabilities relating to other types of insurance claims. A number of factors contribute to this greater uncertainty surrounding the establishment of asbestos and environmental reserves, including, without limitation: (i) the lack of available and reliable historical claims data as an indicator of future loss development, (ii) the long waiting periods between exposure and manifestation of any bodily injury or property damage, (iii) the difficulty in identifying the source of asbestos or environmental contamination, (iv) the difficulty in properly allocating liability for asbestos or environmental damage, (v) the uncertainty as to the number and identity of insureds with potential exposure, (vi) the cost to resolve claims, and (vii) the collectability of reinsurance.

The uncertainties associated with establishing reserves for asbestos and environmental claims and claim adjustment expenses are compounded by the differing, and at times inconsistent, court rulings on environmental and asbestos coverage issues involving: (i) the differing interpretations of various insurance policy provisions and whether asbestos and environmental losses are or were ever intended to be covered, (ii) when the loss occurred and what policies provide coverage, (iii) whether there is an insured obligation to defend, (iv) whether a compensable loss or injury has occurred, (v) how policy limits are determined, (vi) how policy exclusions are applied and interpreted, (vii) the impact of entities seeking bankruptcy protection as a result of asbestos-related liabilities, (viii) whether clean-up costs are covered as insured property damage, and (ix) applicable coverage defenses or determinations, if any, including the determination as to whether or not an asbestos claim is a products/completed operation claim subject to an aggregate limit and the available coverage, if any, for that claim. The uncertainties cannot be reasonably estimated, but could have a material impact on the Company's future operating results and financial condition.

In 2020, the Company completed asbestos ground-up and aggregate environmental reserve studies. These studies were completed by a multi-disciplinary team of internal claims, legal, reinsurance and actuarial personnel, and included all major business segments of the Company's direct, assumed, and ceded asbestos and environmental unpaid claim liabilities. As part of the internal review, policyholders with the largest direct asbestos unpaid claim liabilities were individually evaluated using the Company's proprietary stochastic ground-up model, which is consistent with published actuarial methods of asbestos reserving. Among the factors reviewed in depth by the team of specialists were the type of business, level of exposure, coverage limits, geographic distribution of products, injury type, jurisdiction and legal defenses. Reinsurance recoveries for these policyholders were then separately evaluated by the Company's reinsurance and actuarial personnel. Asbestos and environmental unpaid claim liabilities for all other policyholders were evaluated using aggregate methods that utilized information and experience specific to these policyholders. The studies resulted in an increase to reserves of $200 including: $88 of asbestos reserves and $112 of pollution reserves.

As a result of the significant uncertainty inherent in determining a company's asbestos and environmental liabilities and establishing related reserves, the amount of reserves required to adequately fund the Company's asbestos and environmental claims cannot be accurately estimated using conventional reserving methodologies based on historical data and trends. As a result, the use of conventional reserving methodologies frequently has to be supplemented by subjective considerations including managerial judgment. In that regard, the estimation of asbestos claims and associated liabilities and the analysis of environmental claims considered prevailing applicable law and certain inconsistencies of court decisions as to coverage, plaintiffs' expanded theories of liability, and the risks inherent in major litigation and other uncertainties, the Company believes that in future periods it is possible that the outcome of the continued uncertainties regarding asbestos and environmental related claims could result in an aggregate liability that differs from current reserves and would be covered under the NICO Reinsurance Transaction.

As of December 31, 2020 and 2019, the Company's unpaid claims and claim adjustment expense reserves, net of associated reinsurance recoverables, includes $1,233 and $1,160 respectively, for asbestos and environmental-related claims before consideration of the NICO Reinsurance Transaction.

Net asbestos losses paid in 2020, 2019, and 2018 were $113, $186, and $96 respectively. The Company incurred $110, $251, and $201 of asbestos reserves before consideration of the NICO Reinsurance Transaction, net of change in allowance for doubtful accounts during the years ended December 31, 2020, 2019, and 2018, respectively.

Net environmental losses paid in 2020, 2019, and 2018 were $46, $61, and $42 respectively. The Company incurred $122, $86, and $50, of environmental reserves before consideration of the NICO Reinsurance Transaction, net of change in allowance for doubtful accounts during the years ended December 31, 2020, 2019, and 2018, respectively.

(dollars in millions)

(7) DEBT OUTSTANDING

Debt outstanding as of December 31, 2020 and 2019 includes the following:

Short-term debt:

	2020	2019
Short-term debt[1]	$330	$ -

Long-term debt:

	2020	2019
5.00% Notes, due 2021[1]	$ -	$330
4.95% Notes, due 2022	473	473
4.25% Notes, due 2023	547	547
1.75% €500 million Notes, due 2024	612	561
3.625% €500 million Junior Subordinated Notes, due 2059[2]	612	561
8.50% Surplus Notes, due 2025	140	140
2.75% €750 million Notes, due 2026	917	842
7.875% Surplus Notes, due 2026	227	227
7.625% Notes, due 2028	3	3
4.569% Notes, due 2029	1,000	1,000
3.91% - 4.25% Federal Home Loan Bank Borrowings due 2032	300	300
7.00% Notes, due 2034	124	153
6.50% Notes, due 2035	271	301
7.50% Notes, due 2036	19	19
7.80% Junior Subordinated Notes, due 2087[3]	437	437
10.75% Junior Subordinated Notes, due 2088[4]	35	35
6.50% Notes, due 2042	250	270
4.85% Notes, due 2044	564	614
4.50% Notes, due 2049	232	350
3.951% Notes, due 2050	1,248	1,248
3.95% Notes, due 2060	746	-
7.697% Surplus Notes, due 2097	260	260
	9,017	8,671
Unamortized discount	(472)	(431)
Total long-term debt excluding unamortized debt issuance costs	8,545	8,240
Unamortized debt issuance costs	(48)	(40)
Total long-term debt	$8,497	$8,200

[1] Short-term debt is the current maturity of the 5.00% Notes, due June 1, 2021.
[2] The par value call date and final fixed rate interest payment date is May 23, 2024, subject to certain requirements.
[3] The par value call date and final fixed rate interest payment date is March 15, 2037, subject to certain requirements.
[4] The par value call date and final fixed rate interest payment date is June 15, 2038, subject to certain requirements.

Debt Transactions and In-Force Credit Facilities

On December 1, 2020, LMIC terminated its $250 repurchase agreement.

On November 24, 2020, LMIC terminated its $250 repurchase agreement.

On May 7, 2020, Liberty Mutual Group, Inc. (“LMGI”) issued $500 of Senior Notes due 2060 (the “2060 Notes”) and LMGI exchanged $246 par value of Senior Notes due 2060 for $29 of its 7.00% Senior Notes due 2034, $29 of its 6.50% Senior Notes due 2035, $20 of its 6.50% Senior Notes due 2042, $50 of its 4.85% Senior Notes due 2044 and $118 of its 4.50% Senior Notes due 2049. Interest is payable semi-annually at a fixed rate of 3.95%. The exchanged notes are fully fungible with the 2060 Notes. The 2060 Notes mature on May 15, 2060.

Concurrently with the 2060 Notes exchange offer, LMGI completed a tender offer for the Target Notes with investors not eligible to participate in the 2020 exchange offer for an aggregate cash consideration of $2, including accrued and unpaid interest, for the tender of $1 of its 6.50% Senior Notes due 2035 and a nominal amount of its 6.50% Senior Notes due 2042.

On September 27, 2019, LMGI exchanged $1,248 par value of Senior Notes due 2050 (the “2050 Notes”) for $78 of its 7.00% Senior Notes due 2034, $170 of its 6.50% Senior Notes due 2035, $480 of its 6.50% Senior Notes due 2042, $436 of its 4.85% Senior Notes due 2044, $67 of its 7.80% Junior Subordinated Notes due 2087 and $17 of its 10.75% Junior Subordinated Notes due 2088. LMGI paid an aggregate of $411 cash consideration, including accrued and unpaid interest, for the existing notes accepted for exchange. Interest on the 2050 Notes is payable semi-annually at a fixed rate of 3.951%. The 2050 Notes mature on October 15, 2050.

(dollars in millions)

On June 25, 2019, LMGI amended and restated its five-year unsecured revolving credit facility of $1,000 with an expiration date of June 25, 2024. To date, no funds have been borrowed under the facility.

On June 11, 2019, LMGI issued $350 of Senior Notes due 2049 (the "2049 Notes"). Interest is payable semi-annually at a fixed rate of 4.50%. The 2049 Notes mature on June 15, 2049.

On June 7, 2019 LMGI tendered $196 of 7.80% Junior Subordinated Notes, due 2087 (the "2087 Notes"). LMGI recorded a pre-tax loss of $49, which is included in loss on extinguishment of debt on the accompanying consolidated statement of income.

On May 23, 2019, LMGI redeemed $300 Junior Subordinated Notes due 2067 (the redeemed "2067 Notes"). LMGI terminated the two interest rate swap transactions with respect to the redeemed 2067 Notes. LMGI paid $43 for the early termination of the swap transaction.

On May 23, 2019, LMGI issued €500 million of Series D Junior Subordinated notes (the "Series D Notes") scheduled for redemption on May 23, 2059. The Series D Notes have a par value call date of May 23, 2024 (the "First Call Date") and may be redeemed in whole or in part on each date falling on the fifth anniversary thereafter (the "Reset Period"). Interest is payable annually at a fixed rate of 3.625% up to but excluding the first call date. In the event the Series D Notes are not redeemed on the First Call Date, interest will be payable annually at a rate equal to the relevant Euro 5 Year Swap rate plus 3.700% per year (the "Margin") in respect of the Reset Period commencing on the First Call Date and each subsequent Reset Period, up to but excluding May 23, 2044 (the "Step-up Date"). In the event the Series D Notes are not redeemed on or before the Step-up Date, interest will be payable annually, including the Step-up Date but excluding the stated maturity, in respect of each Reset Period between the Step-up Date and the stated maturity, the relevant Euro 5 Year Swap Rate plus the Margin plus 1.00% per year. LMGI has the right to defer interest payments on the Series D Notes for a period up to ten years. Interest compounds during periods of deferral.

On January 28, 2019, LMGI exchanged $1,000 par value of Senior Notes due 2029 (the "2029 Notes") for $270 of its 5.00% Notes due 2021, $277 of its 4.95% Notes due 2022 and $453 of its 4.25% Notes due 2023. LMGI paid an aggregate of $40 cash consideration, including accrued and unpaid interest, for the existing notes accepted for exchange. Interest on the 2029 Notes is payable semi-annually at a fixed rate of 4.569%. The 2029 Notes mature on February 1, 2029.

LMIC, Peerless Insurance Company ("PIC"), Liberty Mutual Fire Insurance Company ("LMFIC") and Employers Insurance Company of Wausau ("EICOW") are members of the Federal Home Loan Bank. On March 21, 2012, LMFIC borrowed $150 at a rate of 3.91% with a maturity date of March 22, 2032. On March 23, 2012 and April 2, 2012, LMIC borrowed $127 at a rate of 4.24% with a maturity date of March 23, 2032 and $23 at a rate of 4.25% with a maturity date of April 2, 2032, respectively. As of December 31, 2020, all outstanding Federal Home Loan Bank borrowings are fully collateralized. Ironshore Indemnity Inc. ("III") and Ironshore Specialty Insurance Company ("ISIC") memberships were cancelled on February 24th and 25th, 2020, respectively, however there is a five-year waiting period requirement, so the effective date of these membership cancellations will be February 2025.

Payments of interest and principal of the surplus notes are expressly subordinate to all policyholder claims and other obligations of LMIC. Accordingly, interest and principal payments are contingent upon prior approval of the Commissioner of Insurance of the Commonwealth of Massachusetts.

Interest

The Company paid $417, $416, $436 of interest in 2020, 2019, and 2018, respectively.

(8) INCOME TAXES

The components of U.S. Federal, state and foreign income tax expense from continuing operations are:

Years ended December 31,	**2020**	**2019**	**2018**
Current tax expense (benefit):			
U.S. Federal	$144	$53	$(293)
U.S. Federal net operating losses	(32)	(6)	(77)
State	6	11	3
Foreign	163	166	165
Total current tax expense (benefit)	281	224	(202)
Deferred tax (benefit) expense:			
U.S. Federal	(53)	201	578
Foreign	9	(67)	87
Total deferred tax (benefit) expense	(44)	134	665
Total U.S. Federal, state and foreign income tax expense	$237	$358	$463

(dollars in millions)

A reconciliation of the income tax expense attributable to continuing operations computed at U.S. Federal statutory tax rates to the income tax expense as included in the consolidated statements of income is as follows:

Years ended December 31,	**2020**	**2019**	**2018**
Expected U.S. Federal income tax expense (benefit)	$213	$304	$440
Tax effect of:			
Nontaxable investment income	(27)	(32)	(32)
Change in valuation allowance	31	(3)	(27)
Revision to estimates	(3)	(3)	16
General business credits	(11)	(19)	(16)
Audit Settlements	-	-	(5)
Reduction of U.S. Corporate Income Tax Rate	-	-	(9)
One-Time Transition Tax	-	-	(4)
State	6	11	3
Foreign rate differential	23	44	49
U.S. impact from foreign operations	9	22	5
Foreign other	-	30	34
Other	(4)	4	9
Actual income tax expense	$237	$358	$463

The significant components of the deferred income tax assets and liabilities at December 31 are summarized as follows:

	2020	**2019**
Deferred tax assets:		
Unpaid claims discount	$515	$362
Unearned premium reserves	793	752
Net operating losses	286	262
Employee benefits	567	429
Credits	119	210
Other accrued expenses	156	134
Other	346	360
	2,782	2,509
Less: valuation allowance	(69)	(35)
Total deferred tax assets	2,713	2,474
Deferred tax liabilities:		
Deferred acquisition costs	667	629
Net unrealized gains	1,304	835
Intangibles	179	187
Equalization reserves	125	112
Depreciation/amortization	424	349
Other	233	231
Total deferred tax liabilities	2,932	2,343
Net deferred tax (liabilities)/assets	$(219)	$131

The increase in valuation allowance is primarily attributable to the establishment of a valuation allowance for certain Australian and UK operations that continue to generate losses. Based on the assumption that future levels of income will be achieved, management believes it is more likely than not the remaining net deferred tax assets after valuation allowance will be realized.

(dollars in millions)

The Company's subsidiaries have foreign tax credit carry forwards of $31, general business credit carry forwards of $87, and net operating loss carry forwards of $1,156 as of December 31, 2020. The foreign tax credits will begin to expire, if not utilized, in 2029, and the general business credits will begin to expire, if not utilized, in 2039. The net operating losses available in the U.S. and various non-U.S. tax jurisdictions will begin to expire, if not utilized, as follows:

Year	Total
2023	36
2024	6
Thereafter	1,114
Total	**1,156**

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

Balance at December 31, 2018	$68
Additions based on tax positions related to current year	1
Additions for tax positions of prior years	11
Lapse of the statute of limitations	(3)
Settlements	(1)
Translation	(2)
Balance at December 31, 2019	$74
Additions based on tax positions related to current year	1
Additions for tax positions of prior years	8
Lapse of the statute of limitations	(4)
Translation	(10)
Balance at December 31, 2020	$69

Included in the tabular roll forward of unrecognized tax benefits are interest and penalties in the amount of $29 and $30 as of December 31, 2020 and 2019, respectively.

Included in the balance at December 31, 2020 is $60 related to tax positions that would impact the effective tax rate.

The Company recognizes interest and penalties related to unrecognized tax benefits in U.S. Federal, state, and foreign income tax expense. For the years ended December 31, 2020, 2019 and 2018, the Company recognized $0, $2 and $0 of interest and penalties, respectively. The Company had approximately $26 and $29 of interest and penalties accrued as of December 31, 2020 and 2019, respectively.

The statute of limitations has expired through the 2016 tax year. The Company has foreign entities that are open for examination in their local countries for tax years 2015-2020. Any adjustments that may result from the examinations of these income tax returns are not expected to have a material impact on the financial position, liquidity, or results of operations of the Company.

The Company believes that the balance of unrecognized tax benefits could decrease by $7 within the next twelve months as a result of potential settlements and lapse of the statute of limitations.

(9) BENEFIT PLANS

The Company sponsors non-contributory defined benefit pension plans ("the Plans") covering substantially all U.S. employees. The benefits and eligibility are based on age, years of service, and the employee's final average compensation, as more fully described in the Plans. Some foreign subsidiaries also sponsor defined benefit pension plans. In 2014, the Company added a new cash balance benefit formula for all eligible U.S. employees and froze credited service under the plan's final average pay formula. In 2016, the Company announced changes to the U.S. pension plan which included freezing the final average pay formula effective December 31, 2020, and increasing pay credits under the cash balance formula from 4.5% to 5.0% of eligible pay effective January 1, 2018.

The Company sponsors non-qualified supplemental pension plans for selected highly compensated employees to restore the pension benefits they would be entitled to under the Company's U.S. tax qualified, defined benefit pension plan had it not been for limits imposed by the Internal Revenue Code. The supplemental plans are unfunded.

The Company also provides certain postretirement healthcare and life insurance benefits ("Postretirement") covering substantially all U.S. employees. In 2014, the Company's U.S. postretirement medical and dental cost sharing arrangement changed to a defined contribution model with an annual dollar contribution amount based on age and years of eligible credited service. Life insurance benefits are based on a participant's final compensation subject to the plan maximum. The postretirement plan is unfunded. In 2016, the Company announced employees hired on or after January 1, 2018, will not be eligible for coverage under the U.S. postretirement health and life insurance plans. In 2017, the Company announced changes to the U.S.

(dollars in millions)

postretirement health plan which included the transition of Medicare-eligible retirees to the Medicare market place exchange effective January 1, 2018.

In 2020, the Company offered a voluntary early retirement option ("ERO") to U.S. employees meeting certain age and service requirements. Employees opting into the program will receive an enhanced pension benefit and be required to terminate employment with the Company between December 31, 2020 and December 30, 2021. The Company recorded $577 of ERO benefit costs in the consolidated statement of income for the year ended December 31, 2020.

Assets of the U.S. tax-qualified, defined benefit pension plans consist primarily of investments held in a master trust with The Bank of New York Mellon. Assets of the plan are invested primarily in fixed income securities and in diversified public equities. As of December 31, 2020 and 2019, no assets of the plans were held in separate accounts of the Company.

The Company sponsors defined contribution plans for substantially all U.S. (401(k) plan) employees who meet eligibility requirements. During 2020, 2019, and 2018, employees could contribute a percentage of their annual compensation on a before and after-tax basis, subject to Federal limitations. Company contributions are based on the employee's contribution amount. In 2020, 2019, and 2018, the Company incurred matching contributions of $124, $126, and $120 respectively, including the supplemental defined contribution plans.

Compensation expense related to the Company's long-term and short-term incentive compensation plans was $723, $659, and $804 for the years ended December 31, 2020, 2019, and 2018, respectively.

The following table sets forth the assets, obligations, and assumptions associated with the U.S. pension and postretirement benefits. The Company recorded a curtailment in 2018 curtailment as a result of the sale of The Liberty Life Assurance Company to Lincoln Financial Group. The 2018 supplemental pension settlement is driven by a lump sum payout. The amounts are recognized in the accompanying consolidated balance sheets as of December 31, 2020 and 2019, and accompanying consolidated statements of income for the years ended December 31, 2020, 2019, and 2018.

	Pension		Supplemental Pension		Postretirement	
	2020	**2019**	**2020**	**2019**	**2020**	**2019**
Change in benefit obligations:						
Benefit obligation at beginning of year	$8,446	$7,193	$441	$370	$939	$818
Service costs	157	142	7	6	15	16
Interest costs	258	308	12	16	29	35
Amendments	509	-	4	-	62	-
Curtailment	-	-	-	-	2	-
Settlement	-	-	(28)	-	-	-
Actuarial losses	781	1,135	51	71	98	98
Benefits paid	(339)	(332)	(13)	(22)	(26)	(28)
Benefit obligations at end of year	$9,812	$8,446	$474	$441	$1,119	$939
Accumulated benefit obligations	$9,812	$8,420	$474	$432	$1,119	$939
Change in plan assets:						
Fair value of plan assets at beginning of year	$8,615	$7,186	$-	$-	$-	$-
Actual return on plan assets	1,431	1,675	-	-	-	-
Employer contribution	-	85	-	-	-	-
Benefits paid	(338)	(331)	-	-	-	-
Fair value of plan assets at end of year	$9,708	$8,615	$-	$-	$-	$-
Funded status of Plan	$(104)	$169	$(474)	$(441)	$(1,119)	$(939)

(dollars in millions)

	Pension		Supplemental Pension		Postretirement	
	2020	2019	2020	2019	2020	2019
Amounts recognized in the Balance Sheets:						
Assets	$-	$174	$-	$-	$-	$-
Liabilities	(104)	(5)	(474)	(441)	(1,119)	(939)
Net asset (liability) at end of year	$(104)	$169	$(474)	$(441)	$(1,119)	$(939)
Amounts recognized in Accumulated Other Comprehensive Loss (Income):						
Net loss	$1,969	$2,310	$241	$232	$139	$53
Prior service costs	(108)	(131)	(13)	(17)	(77)	(91)
Total	$1,861	$2,179	$228	$215	$62	$(38)
Other changes in Plan assets and projected benefit obligation recognized in Other Comprehensive (Income) Loss:						
Net actuarial (gains) losses	$(118)	$(35)	$51	$72	$98	$98
Amortization of net actuarial loss	(223)	(155)	(42)	(18)	(12)	(1)
Prior service costs	-	-	-	-	-	-
Amortization of prior service cost	23	23	4	4	14	14
Total	$(318)	$(167)	$13	$58	$100	$111

The net benefit costs for the years ended December 31, 2020, 2019 and 2018, include the following components:

December 31, 2020	Pension	Supplemental Pension	Postretirement
Components of net periodic benefit costs:			
Service costs	$157	$7	$15
Interest costs	258	12	29
Expected return on plan assets	(533)	-	-
Amortization of unrecognized:			
Net loss	223	26	12
Prior service cost	(23)	(4)	(14)
Net periodic benefit costs[(1)]	$82	$41	$42
Settlement	-	16	2
ERO P&L	509	4	62
Total Net periodic benefit costs	$591	$61	$106

(1) All components of net periodic benefit costs are reported in operating costs and expenses on the accompanying consolidated statements of income.

December 31, 2019

	Pension	Supplemental Pension	Postretirement
Components of net periodic benefit costs:			
Service costs	$142	$6	$16
Interest costs	308	16	35
Expected return on plan assets	(505)	-	-
Amortization of unrecognized:			
Net loss	155	18	1
Prior service cost	(23)	(4)	(14)
Net periodic benefit costs	$77	$36	$38

(dollars in millions)

December 31, 2018	**Pension**	**Supplemental Pension**	**Postretirement**
Components of net periodic benefit costs:			
Service costs	$147	$5	$18
Interest costs	295	15	33
Expected return on plan assets	(498)	-	-
Amortization of unrecognized:			
Net loss	180	20	4
Prior service cost	(25)	(5)	(16)
Net periodic benefit costs	$99	$35	$39
Settlement	(12)	18	(8)
Net periodic benefit costs	$87	$53	$31

The measurement date used to determine pension and other postretirement is December 31, 2020.

Weighted-average actuarial assumptions for benefit obligations are set forth in the following table:

December 31,	**2020**	**2019**
Pension		
Discount rate	2.86%	3.51%
Rate of compensation increase	4.60%	4.20%
Cash balance interest crediting rate	1.75%	2.50%
Supplemental Pension		
Discount rate	2.81%	3.46%
Rate of compensation increase	5.90%	5.50%
Cash balance interest crediting rate	1.75%	2.50%
Postretirement		
Discount rate	2.89%	3.54%

Weighted-average actuarial assumptions for net periodic benefit costs are set forth in the following table:

December 31,	**2020**	**2019**	**2018**
Pension			
Discount rate	3.52%	4.77%	4.51%
Interest cost effective interest rate	3.10%	4.39%	4.11%
Service cost discount rate	3.35%	4.84%	4.68%
Expected return on plan assets	6.50%	6.75%	6.75%
Rate of compensation increase	4.20%	4.10%	4.10%
Cash balance interest crediting rate	2.50%	3.25%	3.25%
Supplemental Pension			
Discount rate	3.32%	4.70%	4.50%
Interest cost effective interest rate	2.78%	4.28%	4.06%
Service cost discount rate	3.44%	4.85%	4.66%
Rate of compensation increase	5.50%	5.27%	5.33%
Cash balance interest crediting rate	2.50%	3.25%	3.25%
Postretirement			
Discount rate	3.54%	4.78%	4.45%
Interest cost effective interest rate	3.12%	4.39%	4.05%
Service cost discount rate	3.78%	4.97%	4.69%

On an annual basis, the Company reviews the discount rate assumption used to determine the benefit obligations and the composition of various yield curves to ensure that the assumed discount rate reflects the Company's best estimate of the rate of return inherent in a portfolio of high-quality debt instruments that would provide the cash flows necessary to settle the Company's projected benefit payments.

(dollars in millions)

The discount rate assumption used to determine the benefit obligations was based on a yield curve approach where the cash flows related to the benefit plans' liability stream were discounted at an interest rate specifically applicable to the timing of the cash flows. The company calculates service cost by discounting the future cash flows attributable to the current year of service using spot rates specifically applicable to the timing of the cash flows. Interest cost is determined by multiplying each benefit obligation cash flow by the spot rate applicable to that timing of the cash flow.

In choosing the expected long-term rate of return on plan assets, the Company's Retirement Committee considered the historical returns of equity and fixed income markets in conjunction with current economic and financial market conditions.

Effective January 1, 2020, the Company has elected a change to its method of calculating the market-related value of assets used to determine the expected return on plan assets component of net periodic pension cost. The Company previously calculated market-related value for its pension plan by recognizing changes in the fair value of plan assets over a period of five years on all classes of assets. As a result of the change in accounting method, the Company will no longer recognize changes in fair value for the asset classes, such as investment grade fixed income securities and derivatives in the Immunizing Portfolio over five years. Instead, changes in the fair value of these assets will be recognized immediately for purposes of the market-related value. However, the Company will continue to recognize changes in the fair value of the asset classes in the Growth Portfolio over a five-year period. These assets include public equities, private equity, common collective trust funds, non-investment grade fixed income, and emerging market fixed income. The change is preferable to better align pension assets and liabilities with the investment policy designed for the Immunizing Portfolio to hedge the Plan's liability risks, specifically to offset changes in the Plan's liability value due to market-related risk factors such as change in interest rate and credit spreads. Comparative financial statements of prior years have been adjusted to apply the new methodology retrospectively. The change resulted in a $9 change to 2019 AOCI and unassigned funds and a $9 decrease in prepaid pension expense and accrued postretirement and pension benefits on the December 31, 2019 Balance Sheet for a net impact of $7 on net income.

The adjustment is comprised of the difference between the net actuarial loss within AOCI before and after the change in methodology. The actual impact on 2020 expense of the MRVA methodology change compared to the current method resulted in an overall decrease of $90.

Fiscal Year (applies to following year's expense)	**2019**	**2018**
Prior MRVA Method (1)		
Market-Related Value of Assets	$7,923	$7,552
Pension Expense Components:		
Expected Return on Assets	(503)	(508)
Amortization of Unrecognized Loss	272	149
New MRVA Method (2)		
Market-Related Value of Assets	$8,387	$7,503
Expected Return Assumption %	6.50%	6.75%
Pension Expense Components:		
Expected Return on Assets	(533)	(505)
Amortization of Unrecognized Loss	212	155
Cumulative Effect of Method Change		
Market-Related Value of Assets	$464	$(49)
Pension Expense Components:		
Expected Return on Assets	(30)	3
Amortization of Unrecognized Loss	(60)	6
Pension Expense Impact	$(90)	$9

(1) Prior MRVA method used calculated value.

(2) New MRVA method uses calculated value of investment – grade securities and derivatives, and fair value for others.

Effective December 31, 2020, the Company adopted the Scale MP-2020. Effective December 31, 2019, the Company adopted the Private Retirement Plan Mortality table with central year 2012 for employees, retirees, and contingent survivors with White Collar adjustment, projected generationally using Scale MP-2019. At December 31, 2018, the Company adopted the RP-2014 Mortality table for Annuitants and Non-Annuitants with White Collar adjustment, projected generationally with Scale MP-2018.

The weighted-average healthcare cost trend rates are expected to be 7.60% in 2020 graded down to 5.00% in 2028.

Plan Assets

The Company's overall investment strategy for the U.S. pension plan's assets is to achieve a diversified mix of asset types, fund strategies, and fund managers. The U.S. pension plan's primary investment goal is to maximize return within reasonable and prudent levels of risk while also taking into account the liability obligations of the Plan and the risks associated with such liabilities.

(dollars in millions)

The U.S. pension plan's assets are administered by the Liberty Mutual Retirement Committee, which has the fiduciary responsibility for management of the U.S. pension plan's assets in accordance with the Liberty Mutual Retirement Benefit Plan Investment Policy Statement. Effective March 25, 2019, the Liberty Mutual Retirement Committee amended the Investment Policy Statement.

The U.S. pension plan's assets are held in a trust and managed by LMIC, a wholly owned subsidiary of the Company and by its subadvisor, Liberty Mutual Group Asset Management, Inc., which is also a wholly owned subsidiary of the Company.

The investment plan assets consist of two portfolios, an immunizing portfolio and a growth portfolio. The immunizing portfolio is designed to hedge the Plan's liability risks, specifically to offset changes in the Plan's liability value due to market-related risk factors such as changes in interest rates and credit spreads. The growth portfolio is invested in a diversified group of assets that seeks to generate a return in excess of the Plan's liabilities, within an acceptable level of risk. The target allocation for the plan's assets is: 45% immunizing portfolio, 54% growth portfolio, and 1% cash and short-term investments.

The investment strategy of the Immunizing Portfolio is to mitigate the plan's liabilities through the use of core fixed income instruments, such as corporate and sovereign bonds, swaps, and futures contracts.

The investment strategy of the Growth Portfolio is to maximize return over the long term through the use of public equities, private equity, real estate, private debt, non-investment grade fixed income, and emerging market fixed income.

The following tables sets forth by level, within the fair value hierarchy, the Plans' assets at fair value as of December 31, 2020 and 2019.

Fair Value Measurements as of December 31, 2020

Asset Category	**Total**	**Quoted Prices in Active Markets for Identical Assets Level 1[(1)]**	**Significant Observable Inputs Level 2[(1)]**	**Significant Unobservable Inputs Level 3[(1)]**
Cash, cash equivalents and short-term investments[(2)]	$586	$404	$182	$-
Fixed maturities:				
U.S. government and agency securities	749	749	-	-
U.S. state and municipal	212	-	212	-
Corporate and other	4,564	-	4,564	-
Equity investments:				
Common collective trust	2,325	-	2,325	-
Equity investments	5	5	-	-
Limited Partnerships	991	-	-	991
Other assets	276	-	8	268
Total	$9,708	$1,158	$7,291	$1,259

(1) See Note 10 for description of the Fair Value Measurement inputs. Pension Limited Partnerships are valued at the latest fair value reported by the General Partner adjusted by cash flows. Also, the common collective trust assets are valued based on Net Asset Value ("NAV") from BlackRock.

(2) Cash equivalents in Level 2 are net of investment payables of $(180).

(dollars in millions)

Fair Value Measurements as of December 31, 2019

Asset Category	Total	Quoted Prices in Active Markets for Identical Assets Level 1(1)	Significant Observable Inputs Level 2(1)	Significant Unobservable Inputs Level 3(1)
Cash, cash equivalents and short-term investments(2)	$388	$249	$139	$-
Fixed maturities:				
U.S. government and agency securities	578	578	-	-
U.S. state and municipal	173	-	173	-
RMBS/CMO/ABS/CMBS				
Corporate and other	3,561	-	3,561	-
Foreign government securities	-	-	-	-
Equity investments:				
Common collective trust	2,602	-	2,602	-
Equity investments	171	170	1	-
Limited Partnerships	833	-	-	833
Other assets	309	-	8	301
Total(3)	$8,615	$997	$6,484	$1,134

(1) See Note 10 for description of the Fair Value Measurement inputs. Pension Limited Partnerships are valued at the latest fair value reported by the General Partner adjusted by cash flows. Also, the common collective trust assets are valued based on Net Asset Value ("NAV") from BlackRock.
(2) Cash equivalents in Level 2 are net of investment payables of $(139).

Fair Value Measurements Using Significant Unobservable Inputs (Level 3)

	As of December 31, 2020			As of December 31, 2019		
	Purchases	Transfer in to Level 3	Transfer out of Level 3	Purchases	Transfer in to Level 3	Transfer out of Level 3
Limited partnerships	$120	$-	$-	$165	$-	$-
Other assets	27	-	-	48	-	-
Equity investments	-	-	-	1	-	-
Total	$147	$-	$-	$214	$-	$0

The Plans' investments in limited partnerships are recorded at the carrying value as reported by the external fund managers, which is believed to approximate the fair value of the investments.

Cash Flows

Contributions - The Company contributed $0 to the qualified plans, and directly funded $13 to retirees in the supplemental pension plans in 2020. In addition, the Company directly funded $26 to retirees in the postretirement benefit plans in 2020.

The Company expects to contribute approximately $0 to the qualified plans, to directly fund $22 to retirees in the supplemental pension plans, and to directly fund $64 to the postretirement benefit plans in 2021.

(dollars in millions)

Expected Future Benefit Payments - The following benefit payments, which reflect expected future service as appropriate, are expected to be paid:

	Pension	Supplemental Pension	Postretirement Plans
2021	926	22	64
2022	512	26	78
2023	451	26	60
2024	473	27	50
2025	489	26	50
2026-2030	2,577	128	252

(10) FAIR VALUE OF FINANCIAL INSTRUMENTS

Fair value is the price that would be received to sell an asset or would be paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, the Company primarily uses the market approach, which generally utilizes market transaction data for identical or similar instruments.

The hierarchy level assigned to each security in the Company's available for sale portfolio is based on the Company's assessment of the transparency and reliability of the inputs used in the valuation of each instrument at the measurement date. The highest priority is given to unadjusted quoted prices in active markets for identical assets (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Securities are classified based on the lowest level of input that is significant to the fair value measurement. The three hierarchy levels are defined as follows:

- Level 1 — Valuations based on unadjusted quoted market prices in active markets for identical assets or liabilities that the Company has the ability to access.
- Level 2 — Valuations based on observable inputs (other than Level 1 prices), such as quoted prices for similar assets or liabilities at the measurement date, quoted prices in markets that are not active, or other inputs that are observable, either directly or indirectly.
- Level 3 — Valuations based on inputs that are unobservable and significant to the overall fair value measurement and involve management judgment. The unobservable inputs reflect the Company's estimates of the assumptions that market participants would use in valuing the assets and liabilities.

The availability of observable inputs can vary from financial instrument to financial instrument and is affected by a wide variety of factors, including, for example, the type of financial instrument, whether the financial instrument is new and not yet established in the marketplace, and other characteristics particular to the financial instrument. To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires significantly more judgment. Accordingly, the degree of judgment exercised by management in determining fair value is greatest for instruments categorized in Level 3.

The Company is responsible for the determination of fair value and the supporting assumptions and methodologies. The Company gains assurance on the overall reasonableness and consistent application of valuation methodologies and inputs and compliance with accounting standards through the execution of various processes and controls designed to ensure that the Company's assets and liabilities are appropriately valued. For fair values received from third parties or internally estimated, the Company's processes are designed to determine that the valuation methodologies and inputs are appropriate and consistently applied, the assumptions are reasonable and consistent with the objective of determining fair value, and the fair values are accurately recorded. For example, on a continuing basis, the Company assesses the reasonableness of individual fair values that have stale security prices or that exceed certain thresholds as compared to previous fair values received from valuation service providers or brokers or derived from internal models. The Company performs procedures to understand and assess the methodologies, processes and controls of valuation service providers. In addition, the Company may validate the reasonableness of fair values by comparing information obtained from valuation service providers or brokers to other third party valuation sources for selected securities.

The Company used the following methods and assumptions in estimating the fair value of its financial instruments as well as the general classification of such financial instruments pursuant to the above fair value hierarchy:

Fixed Maturities

At each valuation date, the Company uses various valuation techniques to estimate the fair value of its fixed maturities portfolio. The primary method for valuing the Company's securities is through independent third-party valuation service providers. For positions where valuations are not available from independent third-party valuation service providers, the Company utilizes broker quotes and internal pricing methods to determine fair values. The Company obtains a single non-binding price quote from a broker familiar with the security who, similar to the Company's valuation service providers, may consider transactions or activity in similar securities, as applicable, among other information. The brokers providing price quotes are generally from the brokerage divisions of leading financial institutions with market making, underwriting and distribution expertise regarding the security subject to valuation. The evaluation and prioritization of these valuation sources is systematic and predetermined resulting in a single quote or price for each financial instrument. The following describes the techniques generally used to determine the fair value of the Company's fixed maturities by asset class:

U.S. Government and Agency Securities
U.S. government and agency securities consist primarily of bonds issued by the U.S. Treasury and mortgage pass-through agencies such as the Federal Home Loan Bank, the Federal National Mortgage Association and the Federal Home Loan Mortgage Corporation. As the fair values of the Company's U.S. Treasury securities are based on active markets and unadjusted market prices, they are classified within Level 1. The fair value of U.S. government agency securities is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, reported trades, bids, offers and credit spreads. Accordingly, the fair value of U.S. government agency securities is classified within Level 2.

Mortgage-Backed Securities
The Company's portfolio of residential and commercial MBS is originated by both agencies and non-agencies, the majority of which are pass-through securities issued by U.S. government agencies. The fair value of MBS is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, contractual cash flows, prepayment speeds, collateral performance and credit spreads. Accordingly, the fair value of MBS is primarily classified within Level 2.

Asset-Backed Securities
ABS include mostly investment-grade bonds backed by pools of loans with a variety of underlying collateral, including automobile loan receivables, credit card receivables, and collateralized loan obligation securities originated by a variety of financial institutions. The fair value of ABS is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, contractual cash flows, prepayment speeds, collateral performance and credit spreads. Accordingly, the fair value of ABS is primarily classified within Level 2.

Municipal Securities
The Company's municipal portfolio is comprised of bonds issued by U.S. domiciled state and municipal entities. The fair value of municipal securities is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, binding broker quotes, issuer ratings, reported trades and credit spreads. Accordingly, the fair value of municipal securities is primarily classified within Level 2.

Corporate Debt and Other Securities
Corporate debt securities consist primarily of investment-grade debt of a wide variety of corporate issuers and industries. The fair value of corporate and other securities is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, new issuances, issuer ratings, reported trades of identical or comparable securities, bids, offers and credit spreads. Accordingly, the fair value of corporate and other securities is primarily classified within Level 2. In the event third-party vendor valuation is not available, prices are determined using non-binding price quotes from a broker familiar with the security. In this instance, the valuation inputs are generally unobservable and the fair value is classified within Level 3.

Foreign Government Securities
Foreign government securities include bonds issued or guaranteed by foreign governments. The fair value of foreign government securities is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, binding broker quotes, issuer ratings, reported trades of identical or comparable securities and credit spreads. Accordingly, the fair value of foreign government securities is primarily classified within Level 2. In the event third-party vendor valuation is not available, prices are determined using non-binding price quotes from a broker familiar with the security. In this instance, the valuation inputs are generally unobservable and the fair value is classified within Level 3.

Equity Securities
Equity securities include common and preferred stocks. Common stocks with fair values based on quoted market prices in active markets are classified within Level 1. Common stocks with fair values determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active are classified within Level 2. The fair value of preferred stock is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active. Accordingly, the fair value of preferred stock is primarily classified within Level 2.

Short-Term Investments
The fair value of short-term investments is generally determined using observable market inputs that include quoted prices for identical or similar assets in markets that are not active, benchmark yields, new issuances, issuer ratings, reported trades of identical or comparable securities, bids, offers and credit spreads. Accordingly, the fair value of short-term investments is primarily classified within Level 2 of the fair value hierarchy.

Other Investments
Other investments include primarily foreign cash deposits and equity investments in privately held businesses. Cash deposits are primarily valued using quoted prices for similar instruments in active markets; these assets are categorized within Level 2 of the fair value hierarchy. Equity investments in privately held businesses are valued using internal management estimates; they are categorized within Level 3 of the hierarchy. Loans, limited partnership and other alternative investments, which represent the remainder of the other investment balance on the accompanying consolidated balance sheets are not subject to these disclosures and therefore are excluded from the table in this note.

(dollars in millions)

Other Assets and Other Liabilities
Other assets primarily consist of fixed maturities, short-term investments, and equity securities of captive companies sponsored by the Company. These assets are measured based on the methodology for individual securities as discussed above.

Additionally, other assets and other liabilities classified within Level 2 represent the Company's derivatives which are traded over-the-counter ("OTC"). OTC derivatives are valued using market transactions and other market evidence whenever possible, including market-based inputs to models, model calibration to market clearing transactions, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. When models are used, the selection of a particular model to value an OTC derivative depends on the contractual terms of, and specific risks inherent in the instrument, as well as the availability of pricing information in the market. The Company generally uses similar models to value similar instruments. Valuation models require a variety of inputs, including contractual terms, market prices and rates, yield curves, credit curves, measures of volatility, prepayment rates and correlations of such inputs. For OTC derivatives that trade in liquid markets, such as generic forwards, swaps and options, model inputs can generally be corroborated by observable market data by correlation or other means, and model selection does not involve significant management judgment.

Life Insurance Obligations
Life insurance obligations include certain variable annuity contracts that provide guaranteed minimum income benefits. These benefits are accounted for as embedded derivatives and are bifurcated from the host contract and carried at fair value. The fair value of these embedded derivatives are computed on a recurring basis using assumptions predominately classified as Level 3 (significant unobservable) inputs. While some inputs are observable in the market, such as risk free rates, volatility and historical equity returns, the underlying future policyholder behavior inputs are highly unobservable. The significant policyholder behavior assumptions include lapse and the underlying annuitization rate.

Assets and Liabilities Measured at Fair Value on a Recurring Basis
The following tables summarize the Company's assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2020 and 2019:

	As of December 31, 2020			
Assets, at Fair Value	**Level 1**	**Level 2**	**Level 3**	**Total**
U.S. government and agency securities	$7,091	$118	$-	$7,209
Residential MBS	-	5,882	77	5,959
Commercial MBS	-	4,642	85	4,727
Other MBS and ABS	-	5,298	14	5,312
U.S. state and municipal	-	9,195	92	9,287
Corporate and other	-	33,019	759	33,778
Foreign government securities	-	5,029	-	5,029
Total fixed maturities, available for sale	7,091	63,183	1,027	71,301
Common stock	2,451	26	85	2,562
Preferred stock	-	3	7	10
Total equity securities	2,451	29	92	2,572
Short-term investments	2	274	-	276
Other investments	(2)	143	387	528
Other assets	-	-	31	31
Total assets	$9,542	$63,629	$1,537	$74,708
Liabilities, at Fair Value				
Life insurance obligations	$-	$-	$(122)	$(122)
Other liabilities	-	(5)	-	(5)
Total liabilities	$-	$(5)	$(122)	$(127)

(dollars in millions)

	As of December 31, 2019			
Assets, at Fair Value	**Level 1**	**Level 2**	**Level 3**	**Total**
U.S. government and agency securities	$9,060	$120	$-	$9,180
Residential MBS	-	6,265	-	6,265
Commercial MBS	-	4,451	85	4,536
Other MBS and ABS	-	5,136	15	5,151
U.S. state and municipal	-	8,827	92	8,919
Corporate and other	-	25,144	437	25,581
Foreign government securities	-	4,974	-	4,974
Total fixed maturities, available for sale	9,060	54,917	629	64,606
Common stock	2,027	60	43	2,130
Preferred stock	-	3	7	10
Total equity securities, available for sale	2,027	63	50	2,140
Short-term investments	-	210	12	222
Other investments	2	105	278	385
Other assets	-	18	22	40
Total assets	$11,089	$55,313	$991	$67,393
Liabilities, at Fair Value				
Life insurance obligations	$-	$-	$(120)	$(120)
Other liabilities	-	-	-	-
Total liabilities	$-	$-	$(120)	$(120)

Changes in Level 3 Recurring Fair Value Measurements

The following tables summarize the fair values of assets on a recurring basis classified as Level 3 within the fair value hierarchy:

	As of December 31, 2020			As of December 31, 2019		
	Purchases	**Transfer in to Level 3**	**Transfer out of Level 3**	**Purchases**	**Transfer in to Level 3**	**Transfer out of Level 3**
Assets, at Fair Value						
U.S. government and agency securities	$-	$-	$-	$-	$-	$-
Residential MBS	77	-	-	94	-	(86)
Commercial MBS	132	-	(123)	715	-	(693)
Other MBS and ABS	-	7	(7)	53	-	(22)
U.S. state and municipal	-	50	(50)	13	13	-
Corporate and other	851	45	(7)	517	17	-
Foreign government securities	-	-	-	-	-	-
Total fixed maturities	1,060	102	(187)	1,392	30	(801)
Common stock	22	19	-	24	-	(8)
Preferred stock	-	-	-	-	-	-
Total equity securities	22	19	-	24	-	(8)
Short-term investments	33	-	-	109	-	-
Other investments	168	-	-	105	-	-
Other assets	2	-	-	-	-	-
Total assets	1,285	121	(187)	1,630	30	(809)
Liabilities, at Fair Value						
Life insurance obligations	$11	$-	$-	$11	$-	$-
Total liabilities	$11	$-	$-	$11	$-	$-

Transfers into and out of Level 3 were primarily due to changes in the observability of pricing inputs.

(dollars in millions)

Quantitative Information about Level 3 Fair Value Measurements
The following table provides information about the significant unobservable inputs used for recurring fair value measurements for certain material Level 3 assets and liabilities and includes only those instruments for which information about the inputs is reasonably available to the Company. As the input information with respect to certain Level 3 instruments may not be reasonably available to the Company, balances shown below may not equal total amounts reported for such Level 3 assets and liabilities.

	Fair Value at December 31, 2020	Valuation Technique(s)	Unobservable Input	Range (Weighted Average)
Assets, at Fair Value				
Other MBS and ABS	$1	Spread Model	Credit Spread (a)	4034-4034 (4034 bps)
Corporate and other	$75	Spread Model	Credit Spread (a)	62-281 (233 bps)
Other Assets	$28	Discounted Cash Flow	Lapse rates (b)	1.3%-6.3%
			Annuitization take-up rate (c)	0.0%-11.6%
Liabilities, at Fair Value				
Life insurance obligations	$122	Discounted Cash Flow	Lapse rates (b)	1.3%-13.5%
			Annuitization take-up rate (c)	0%-25.9%

(a) An increase in the credit spread will lead to a decrease in fair value and vice versa.
(b) An increase in the lapse rates will lead to a decrease in fair value and vice versa.
(c) An increase in the take-up rate will lead to an increase in fair value and vice versa.

	Fair Value at December 31, 2019	Valuation Technique(s)	Unobservable Input[(a)]	Range (Weighted Average)
Assets, at Fair Value				
Other MBS and ABS	$2	Spread Model	Credit Spread (a)	990-990 (990 bps)
Corporate and other	$70	Spread Model	Credit Spread (a)	62-263 (253 bps)
Other Assets	$23	Discounted Cash Flow	Lapse rates (b)	1.3%-6.3%
			Annuitization take-up rate (c)	0.0%-11.6%
Liabilities, at Fair Value				
Life insurance obligations	$120	Discounted Cash Flow	Lapse rates (b)	1.3%-13.8%
			Annuitization take-up rate (c)	0%-28.8%

(a) An increase in the credit spread will lead to a decrease in fair value and vice versa.
(b) An increase in the lapse rates will lead to a decrease in fair value and vice versa.
(c) An increase in the take-up rate will lead to an increase in fair value and vice versa.

The Company had no material assets or liabilities that were measured at fair value on a nonrecurring basis during the years ended December 31, 2020 and 2019.

Fair Value Option
The Company has elected to apply the fair value option to certain financial instruments in limited circumstances. The fair value option election is made on an instrument by instrument basis. All periodic changes in the fair value of the elected instruments are reflected in the accompanying consolidated statements of income. The impact of the fair value option elections is immaterial to the Company.

The Company has not applied ASC 820 to non-financial assets and liabilities.

(11) COMMITMENTS AND CONTINGENT LIABILITIES

Various lawsuits against the Company have arisen in the normal course of business. Contingent liabilities arising from litigation, income taxes, and other matters are not considered material in relation to the financial position of the Company.

The Company leases certain office facilities and equipment under operating leases expiring in various years through 2032. In addition, the Company is party to one land lease expiring in 2025. Rental expense was $184, $216, and $229 for the years ended December 31, 2020, 2019, and 2018, respectively. The Company also owns certain office facilities and receives rental income from tenants under operating leases expiring in various years through 2031. Rental income was $37, $36, and $36 for the years ended December 31, 2020, 2019, and 2018 respectively.

(dollars in millions)

Future minimum rental payments and receipts under non-cancelable leases with terms in excess of one year are estimated as follows:

	Operating Leases	Land Leases	Net Lease Obligations
2021	$170	$1	$171
2022	146	1	147
2023	120	1	121
2024	108	1	109
2025	83	-	83
2026 and thereafter	213	-	213
Total	$840	$4	$844

The Company has a 15 year sale lease back agreement for the 10 St. James and 75 Arlington properties that extends through 2031. Lease obligations are included in the future minimum rental payments table.

The Company is contingently liable for structured settlement obligations for which it has accepted assignments. The loss contingency would arise if the issuer of the guarantee contract related to the structured settlement liabilities were unable to fulfil their obligations. At December 31, 2020 and 2019, the contingent liability was $1,469 and $1,517, respectively.

As of December 31, 2020, the Company had unfunded commitments in traditional private equity partnerships, natural resources, real estate, private credit, and other of $1,394, $441 ($67 of which is related to energy investments), $1,267, $1,499, and $176, respectively.

As of December 31, 2020, the Company had commitments to purchase various residential MBS at a cost and fair value of $1,065 and $1,066 respectively

As of December 31, 2020, the Company had $407 of undrawn letter of credit outstanding secured by assets of $424.

(12) POLICYHOLDERS' EQUITY

Statutory Surplus and Net Income

The statutory surplus of the Company's domestic insurance companies was $22,830 and $20,538 as of December 31, 2020 and 2019, respectively. The statutory net income of the Company's domestic insurance companies was $782, $967, and $4,246 for the years ended December 31, 2020, 2019, and 2018, respectively. The Company's domestic insurance subsidiaries prepare statutory basis financial statements in accordance with the National Association of Insurance Commissioners' Accounting Practices and Procedures Manual ("NAIC APP"), subject to any deviations prescribed or permitted by the insurance commissioners of the various insurance companies' states of domicile. The Company does not have any material permitted practices that deviate from the NAIC APP.

Dividends

The insurance subsidiaries' ability to pay dividends is restricted under applicable insurance law and regulations and may only be paid from unassigned surplus. Under the insurance laws of the domiciliary states of the insurance subsidiaries, an insurer may make an ordinary dividend payment if its surplus as regards to policyholders, following such dividend, is reasonable in relation to its outstanding liabilities, is adequate to its financial needs and does not exceed the insurer's unassigned surplus. However, no insurer may pay an extraordinary dividend without the approval or non-disapproval of the domiciliary insurance regulatory authority. Insurance subsidiaries owned directly by LMGI are LMIC, Liberty Mutual Personal Insurance Company ("LMPICO"), LMFIC and EICOW.

Under the insurance laws of Massachusetts, the domiciliary state of LMIC, an extraordinary dividend is defined as a dividend whose fair market value, together with other dividends made within the preceding 12 months, exceeds the greater of 10% of the insurer's surplus as regards policyholders as of the preceding December 31, or the insurer's net income for the 12-month period ending on the preceding December 31. Under the insurance laws of New Hampshire, the domiciliary state of LMPICO, an extraordinary dividend is defined as (1) a dividend whose fair market value, together with other dividends paid within the preceding 12 months, exceeds the lesser of (a) 10% of the insurer's surplus as regards policyholders as of the preceding December 31, or (b) the insurer's net income, excluding realized capital gains, for the calendar year preceding the date of the dividend, but not including pro rata distributions of any class of the insurer's own securities, or (2) the aggregate of the insurer's net income from the previous two calendar years that has not already been paid out as dividends, excluding realized capital gains and any dividends paid in the previous two calendar years. Under the insurance laws of Wisconsin, the domiciliary state of LMFIC and EICOW, an extraordinary dividend is defined as a dividend whose fair market value, together with other dividends paid within the preceding 12 months, exceeds the lesser of (a) 10% of the insurer's surplus with regard to policyholders as of the preceding December 31, or (b) the greater of (1) the insurer's net income for the calendar year preceding the date of the dividend, minus realized capital gains for that calendar year, or (2) the aggregate of the insurer's net income for the three calendar years preceding the date of the dividend, minus realized capital gains for those calendar years and minus dividends paid within the first two of the preceding three calendar years.

Changes in the extraordinary dividend regulation of the domiciliary states of LMIC, LMPICO, LMFIC, and EICOW could negatively affect LMGI's ability to pay principal and interest on the notes held at LMGI, as could a redomestication or merger of LMIC, LMPICO, LMFIC, or EICOW to a different domiciliary state. The maximum dividend payout in 2021 that may be made prior to regulatory approval is $2,273.

(13) SUBSEQUENT EVENTS

On January 27, 2021, Liberty Mutual Group Inc. issued $800 of 4.300% Series E Junior Subordinated Notes due 2061 (the "Notes"). Interest on the Notes is payable February 1 and August 1 of each year commencing on August 1, 2021 and the Notes may be redeemed in whole or in part on February 1, 2026 or on any Interest Payment Date thereafter, at a redemption price equal to their principal amount plus accrued and unpaid interest. The Notes mature February 1, 2061.

Management has assessed material subsequent events through February 23, 2021, the date the financial statements were available to be issued.