Sirius International Group, Ltd.

Consolidated Financial Statements

For the years ended December 31, 2018, 2017, and 2016

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Report of Independent Auditors

To the Board of Directors and Shareholder of Sirius International Group, Ltd.

We have audited the accompanying consolidated financial statements of Sirius International Group, Ltd. and its subsidiaries, which comprise the consolidated balance sheets as of December 31, 2018 and 2017, and the related consolidated statements of (loss) income, comprehensive (loss) income, shareholder's equity and cash flows for each of the three years in the period ended December 31, 2018.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits 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 consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Company's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Sirius International Group, Ltd. and its subsidiaries as of December 31, 2018 and 2017, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2018 in accordance with accounting principles generally accepted in the United States of America.

PricewaterhouseCoopers LLP

New York, New York
April 30, 2019

Sirius International Group, Ltd.
Consolidated Balance Sheets
As at December 31, 2018 and 2017

(Expressed in millions of U.S. dollars, except share information)	2018	2017
Assets		
Fixed maturity investments, trading, at fair value (*Amortized cost 2018: $1,949.9; 2017: $2,194.4*)	$ 1,946.4	$ 2,176.1
Short-term investments, at fair value (*Amortized cost 2018: $682.4; 2017: $594.5*)	681.7	594.2
Equity securities, trading, at fair value (C*ost 2018: $409.4; 2017: $275.1*)	380.0	299.2
Other long-term investments, at fair value (C*ost 2018: $337.6; 2017: $255.5*)	365.0	269.5
Cash	119.4	215.6
Restricted cash	12.8	14.8
Total investments and cash	3,505.3	3,569.4
Accrued investment income	14.1	14.1
Insurance and reinsurance premiums receivable	630.6	543.6
Reinsurance recoverable on unpaid losses	350.2	319.7
Reinsurance recoverable on paid losses	55.0	17.5
Funds held by ceding companies	186.8	153.2
Ceded unearned insurance and reinsurance premiums	159.8	106.6
Deferred acquisition costs	141.6	120.9
Deferred tax asset	202.5	244.1
Accounts receivable on unsettled investment sales	5.0	0.3
Goodwill	400.6	401.0
Intangible assets	195.6	216.3
Other assets	81.5	81.0
Total assets	**$ 5,928.6**	**$ 5,787.7**
Liabilities		
Loss and loss adjustment expense reserves	$ 2,016.7	$ 1,898.5
Unearned insurance and reinsurance premiums	647.2	506.8
Ceded reinsurance payable	206.9	139.1
Funds held under reinsurance treaties	110.6	73.4
Deferred tax liability	237.4	282.2
Debt	696.8	723.2
Accounts payable on unsettled investment purchases	3.2	0.3
Other liabilities	125.3	133.5
Total liabilities	**4,044.1**	**3,757.0**
Commitments and contingencies (See **Note 20)**		
Common shareholder's equity		
Common shares (*shares issued and outstanding: 12,000*)	0.1	0.1
Additional paid-in surplus	1,524.8	1,409.7
Retained earnings	559.7	760.6
Accumulated other comprehensive (loss)	(201.8)	(139.9)
Total common shareholder's equity	**1,882.8**	**2,030.5**
Non-controlling interests	**1.7**	**0.2**
Total equity	**1,884.5**	**2,030.7**
Total liabilities and equity	**$ 5,928.6**	**$ 5,787.7**

See Notes to Consolidated Financial Statements.

Sirius International Group, Ltd.
Consolidated Statements of (Loss) Income
For the years ended December 31, 2018, 2017, and 2016

(Expressed in millions of U.S. dollars)	**2018**	**2017**	**2016**
Revenues			
Net earned insurance and reinsurance premiums	$ 1,262.3	$ 1,035.3	$ 890.1
Net investment income	70.9	56.5	56.4
Net realized investment gains (losses)	2.3	(27.4)	288.1
Net unrealized investment (losses)	(23.1)	(23.3)	(238.2)
Net foreign exchange gains (losses)	22.7	9.5	(10.9)
Gain on revaluation of contingent consideration	3.5	35.2	-
Other revenue	71.2	20.8	9.0
Total revenues	**1,409.8**	**1,106.6**	**994.5**
Expenses			
Loss and loss adjustment expenses	900.0	811.2	519.3
Insurance and reinsurance acquisition expenses	255.4	197.2	210.3
Other underwriting expenses	146.2	106.3	107.3
General and administrative expenses	64.3	78.9	48.6
Intangible asset amortization expenses	15.8	10.2	-
Impairment of intangible assets	8.0	5.0	-
Interest expense on debt	30.8	22.4	34.6
Total expenses	**1,420.5**	**1,231.2**	**920.1**
Pre-tax (loss) income	**(10.7)**	**(124.6)**	**74.4**
Income tax (expense) benefit	(40.4)	(26.4)	7.4
(Loss) income before equity in earnings of unconsolidated affiliates	**(51.1)**	**(151.0)**	**81.8**
Equity in earnings of unconsolidated affiliates, net of tax	-	-	6.6
Net (loss) income	**(51.1)**	**(151.0)**	**88.4**
Less: income attributable to non-controlling interests	(1.4)	0.4	(0.5)
(Loss) income before dividends on Preference shares	**(52.5)**	**(150.6)**	**87.9**
Dividends on Preference shares	-	(14.1)	(18.8)
Net (loss) income attributable to Sirius Group's common shareholder	**$ (52.5)**	**$ (164.7)**	**$ 69.1**

See Notes to Consolidated Financial Statements.

Sirius International Group, Ltd.
Consolidated Statements of Comprehensive (Loss) Income
For the years ended December 31, 2018, 2017, and 2016

(Expressed in millions of U.S. dollars)	2018	2017	2016
Comprehensive (loss) income			
Net (loss) income	$ (51.1)	$ (151.0)	$ 88.4
Other comprehensive (loss) income, net of tax			
Change in foreign currency translation, net of tax	(61.9)	71.7	(67.3)
Net change in other, net of tax	-	-	1.2
Total other comprehensive (loss) income	**(61.9)**	**71.7**	**(66.1)**
Comprehensive (loss) income	**(113.0)**	**(79.3)**	**22.3**
Income attributable to non-controlling interests	(1.4)	0.4	(0.5)
Comprehensive (loss) income attributable to Sirius Group's common shareholder	**$ (114.4)**	**$ (78.9)**	**$ 21.8**

See Notes to Consolidated Financial Statements.

Sirius International Group, Ltd.
Consolidated Statements of Shareholder's Equity
For the years ended December 31, 2018, 2017, and 2016

(Expressed in millions of U.S. dollars)	**2018**	**2017**	**2016**
Common shares			
Balance at beginning and end of period	$ 0.1	$ 0.1	$ 0.1
Additional paid-in surplus			
Balance at beginning of period	1,409.7	1,384.0	1,341.8
Capital contributions	115.0	275.8	20.0
Redemption of preference shares	-	(250.0)	-
Contribution from sale of OneBeacon	-	-	22.1
Other, net	0.1	(0.1)	0.1
Balance at end of period	1,524.8	1,409.7	1,384.0
Retained earnings			
Balance at beginning of period	760.6	1,035.3	986.2
Cumulative effect of an accounting change	1.6	-	-
Balance at beginning of period, as adjusted	762.2	1,035.3	986.2
Net (loss) income	(51.1)	(151.0)	88.4
Income attributable to non-controlling interests	(1.4)	0.4	(0.5)
Dividends declared on common shares	(150.0)	(110.0)	(20.0)
Dividends to preference shareholders	-	(14.1)	(18.8)
Balance at end of period	559.7	760.6	1,035.3
Accumulated other comprehensive (loss)			
Balance at beginning of period	(139.9)	(211.6)	(145.5)
Accumulated net foreign currency translation (losses)			
Balance at beginning of period	(139.9)	(211.6)	(144.3)
Net change in foreign currency translation	(61.9)	71.7	(67.3)
Balance at the end of period	(201.8)	(139.9)	(211.6)
Accumulated other comprehensive income (loss), other			
Balance at beginning of year	-	-	(1.2)
Net change, other	-	-	1.2
Balance at the end of period	-	-	-
Balance at the end of period	(201.8)	(139.9)	(211.6)
Total common shareholder's equity	**$ 1,882.8**	**$ 2,030.5**	**$ 2,207.8**
Non-controlling interests	1.7	0.2	1.3
Total equity	**$ 1,884.5**	**$ 2,030.7**	**$ 2,209.1**

See Notes to Consolidated Financial Statements.

Sirius International Group, Ltd.
Consolidated Statements of Cash Flows
For the years ended December 31, 2018, 2017, and 2016

(Expressed in millions of U.S. dollars)	2018	2017	2016
Cash flows provided from (used for) operations:			
Net (loss) income	$ (51.1)	$ (151.0)	$ 88.4
Adjustments to reconcile net income to net cash provided from (used for) operations:			
Net realized and unrealized investment (gains) losses	20.8	50.7	(49.9)
Amortization of premium on fixed maturity investments	6.1	16.7	21.0
Amortization of intangible assets	15.8	10.2	-
Depreciation and other amortization	9.5	8.9	6.7
Revaluation of contingent consideration	(3.5)	(35.2)	-
Impairment of intangible assets	8.0	5.0	-
Excess of fair value of acquired net assets over cost	-	-	(4.3)
Undistributed equity in earnings of unconsolidated affiliates, after-tax	-	-	(6.6)
Other operating items:			
Net change in loss and loss adjustment expense reserves	203.7	188.3	18.1
Net change in reinsurance recoverable on paid and unpaid losses	(95.7)	(11.1)	(23.6)
Net change in funds held by ceding companies	(48.0)	(38.9)	(15.1)
Net change in unearned insurance and reinsurance premiums	195.5	55.7	60.8
Net change in ceded reinsurance payable	93.4	22.8	11.5
Net change in ceded unearned insurance and reinsurance premiums	(76.3)	14.4	(1.9)
Net change in insurance and reinsurance premiums receivable	(144.1)	(102.3)	(95.4)
Net change in deferred acquisition costs	(28.4)	(27.0)	(14.2)
Net change in funds held under reinsurance treaties	42.7	5.8	13.0
Net change in current and deferred income taxes, net	18.7	13.3	(12.0)
Net change in other assets and liabilities, net	(31.6)	(45.7)	0.2
Net cash provided from (used for) operations	**135.5**	**(19.4)**	**(3.3)**
Cash flows (used for) provided from investing activities:			
Net change in short-term investments	(87.2)	(3.6)	(198.2)
Sales of fixed maturities and convertible fixed maturity investments	1,307.2	1,421.4	2,438.4
Maturities, calls, and paydowns of fixed maturity and convertible fixed maturity investments	102.7	292.2	141.8
Sales of common equity securities	353.0	82.4	848.4
Distributions and redemptions of other long-term investments	72.4	40.6	27.9
Sales of consolidated subsidiaries, net of cash sold	-	0.8	173.5
Contributions to other long-term investments	(160.1)	(167.5)	(73.5)
Purchases of common equity securities	(505.7)	(167.8)	(224.7)
Purchases of fixed maturities and convertible fixed maturity investments	(1,256.3)	(1,018.5)	(3,186.0)
Purchases and mergers of consolidated subsidiaries, net of cash acquired	(7.9)	(354.5)	27.5
Net change in unsettled investment purchases and sales	(1.2)	(7.9)	38.4
Other, net	(4.8)	(5.9)	4.4
Net cash (used for) provided from investing activities	**(187.9)**	**111.7**	**17.9**
Cash flows (used for) financing activities:			
Capital contribution from parent	115.0	61.0	20.0
Contribution from sale of OneBeacon	-	-	22.1
Issuance of debt, net of issuance costs	-	340.8	392.4
Redemption of preference share	-	(250.0)	-
Repayment of debt	-	(3.8)	(405.6)
Payment of contingent consideration	(0.9)	(30.6)	-
Change in collateral held on Interest Rate Cap	-	(1.1)	(0.5)
Dividends to common shareholders	(150.0)	(110.0)	(20.0)
Cash dividends paid to non-controlling interests	-	(14.1)	(18.8)
Other, net	-	(1.0)	0.8
Net cash (used for) financing activities	**(35.9)**	**(8.8)**	**(9.6)**
Effect of exchange rate changes on cash	9.9	9.9	(9.4)
Net (decrease) increase in cash and restricted cash during period	(98.3)	93.4	(4.4)
Cash and restricted cash balance at beginning of period	230.5	137.1	141.5
Cash and restricted cash balance at end of period	**$ 132.2**	**$ 230.5**	**$ 137.1**

See Notes to Consolidated Financial Statements.

Sirius International Group, Ltd.
Notes to Consolidated Financial Statements
For the years ended December 31, 2018, 2017, and 2016

Note 1. General

Sirius International Group, Ltd. (the "Company" or "SIG") is a Bermuda exempted company whose principal businesses are conducted through its wholly and majority owned insurance subsidiaries (collectively with the Company, "Sirius Group"). The company provides insurance, reinsurance, and insurance services on a worldwide basis.

Note 2. Summary of significant accounting policies

Basis of presentation

The accompanying consolidated financial statements at December 31, 2018, have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP"). The accompanying consolidated financial statements present the consolidated results of operations, financial condition, and cash flows of the Company and its subsidiaries and those entities in which the Company has control and a majority economic interest as well as those variable interest entities ("VIEs") that meet the requirements for consolidation. All intercompany transactions have been eliminated in consolidation.

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 as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Certain amounts in the prior period financial statements have been reclassified to conform to the current presentation. Tabular dollar amounts are in millions, with the exception of share and per share amounts. All amounts are reported in U.S. dollars, except where noted otherwise.

On May 26, 2017, Sirius International Insurance Group, Ltd. ("Sirius Ltd."), the Company's indirect parent, acquired 100% ownership of IMG Acquisition, Inc. and its subsidiaries ("IMG"), through Sirius Acquisitions Holding Company II ("SAHC2"). On June 29, 2018, SAHC2 was contributed to Sirius Bermuda Insurance Company Ltd. ("SBDA"), a subsidiary of the Company. The contribution of SAHC2 to SBDA qualifies as a common control transaction and SAHC2's results of operations and cash flows for the year ended December 31, 2018 are included in Sirius Group's consolidated financial statements. In addition, the comparative information for the year ended December 31, 2017 has been revised to include SAHC2's financial position as at December 31, 2017 and results of operations and cash flows for the period SAHC2 was under common control.

Significant accounting policies

Investment securities
Sirius Group's invested assets consist of securities and other investments held for general investment purposes. Sirius Group's portfolio of fixed maturity investments and equity securities held for general investment purposes are classified as trading and are reported at fair value as of the balance sheet date. Changes in unrealized gains and losses are reported pre-tax in revenues. Realized investment gains and losses are accounted for using the first-in first-out method and are reported pre-tax in revenues. Premiums and discounts on all fixed maturity investments are amortized and/or accreted to income over the anticipated life of the investment and are reported in Net investment income.

Sirius Group's invested assets that are measured at fair value include fixed maturity investments, common and preferred equity securities, and other long-term investments, such as interests in hedge funds and private equities. Fair value is defined as the price received to sell an asset in an orderly transaction between market participants at the measurement date reflecting the highest and best use valuation concepts. In determining its estimates of fair value, Sirius Group uses a variety of valuation approaches and inputs. Whenever possible, Sirius Group estimates fair value using valuation methods that maximize the use of quoted prices and other observable inputs.

Short-term investments
Short-term investments consist of money market funds, certificates of deposit and other securities which, at the time of purchase, mature or become available for use within one year. Short-term investments are carried at fair value.

Other long-term investments
Other long-term investments consist primarily of hedge funds, private equity funds, other investments in limited partnerships and other private equity securities. The fair value of other long-term investments is generally based upon Sirius Group's proportionate interest in the underlying fund's net asset value, which is deemed to approximate fair value. In addition, due to a lag in reporting, some of the fund managers, fund administrators, or both, are unable to provide final fund valuations as of the Company's reporting date. In these circumstances, Sirius Group estimates the return of the current period and uses all credible information available. This includes utilizing preliminary estimates reported by its fund managers and using information that is available to Sirius Group with respect to the underlying investments, as necessary. The changes in fair value are reported in pre-tax revenues in Net unrealized investment (losses). Actual final fund valuations may differ from Sirius Group's estimates and these differences are recorded in the period they become known as a change in estimate.

Other long-term investments also includes certain investments that are eligible for the equity method where Sirius Group has elected the fair value option under which the changes in fair value are reported in pre-tax revenues in Net unrealized investment (losses). (See **Note 17**.)

Cash

Cash includes amounts on hand and demand deposits with banks and other financial institutions. Amounts presented in the statement of cash flows are shown net of balances acquired and sold in the purchase or sale of the Company's consolidated subsidiaries.

Restricted cash

Restricted cash represents cash and cash equivalents that Sirius Group is (a) holding for the benefit of a third party and is legally or contractually restricted as to withdrawal or usage for general corporate purposes; and (b) not replaceable by another type of asset other than cash or cash equivalents, under the terms of Sirius Group's contractual arrangements with such third parties.

Insurance and reinsurance operations

Premiums written are recognized as revenues and are earned ratably over the term of the related policy or reinsurance treaty. Premiums written include amounts reported by brokers, managing general underwriters, and ceding companies, supplemented by the Company's own estimates of premiums where reports have not been received. The determination of premium estimates requires a review of the Company's experience with the ceding companies, managing general underwriters, familiarity with each market, the timing of the reported information, an analysis and understanding of the characteristics of each class of business, and management's judgment of the impact of various factors, including premium or loss trends, on the volume of business written and ceded to the Company. On an ongoing basis, the Company's underwriters review the amounts reported by these third parties for reasonableness based on their experience and knowledge of the subject class of business, taking into account the Company's historical experience with the brokers or ceding companies. Unearned premiums represent the portion of premiums written that are applicable to future insurance or reinsurance coverage provided by policies or treaties in force.

Deferred acquisition costs represent commissions, premium taxes, brokerage expenses, and other costs which are directly attributable to the successful acquisition or renewal of contracts and vary with the production of business. These costs are deferred and amortized over the period during which the premiums are earned. Amortization of Deferred acquisition costs are shown net of contractual commissions earned on reinsurance ceded within Insurance and reinsurance acquisition expenses. Deferred acquisition costs are limited to the amount expected to be recovered from future earned premiums and anticipated investment income. This limitation is referred to as a premium deficiency. A premium deficiency is recognized if the sum of expected loss and loss adjustment expenses ("LAE"), expected dividends to policyholders, unamortized acquisition costs, and maintenance costs exceeds related unearned premiums and anticipated investment income. A premium deficiency is recognized by charging any unamortized acquisition costs to expense to the extent required in order to eliminate the deficiency. If the premium deficiency exceeds unamortized acquisition costs, then a liability is accrued for the excess deficiency.

Other underwriting expenses consist primarily of personnel related expenses (including salaries, benefits, and variable compensation expense) and other general operating expenses related to the underwriting operations.

Losses and LAE are charged against income as incurred. Unpaid insurance loss and LAE reserves are based on estimates (generally determined by claims adjusters, legal counsel, and actuarial staff) of the ultimate costs of settling claims, including the effects of inflation and other societal and economic factors. Unpaid reinsurance loss and LAE reserves are based primarily on reports received from ceding companies and actuarial projections. Unpaid loss and LAE reserves represent management's best estimate of ultimate losses and LAE, net of estimated salvage and subrogation recoveries, if applicable. Such estimates are regularly reviewed and updated and any resulting adjustments are reflected in current operations. The process of estimating loss and LAE reserves involves a considerable degree of judgment by management and the ultimate amount of expense to be incurred could be greater or less than the amounts currently reflected in the financial statements.

Sirius Group enters into ceded reinsurance contracts to protect its businesses from losses due to concentration of risk, to manage its operating leverage ratios and to limit losses arising from catastrophic events. Such reinsurance contracts are executed through excess of loss treaties and catastrophe contracts under which the reinsurer indemnifies for a specified part or all of certain types of losses over stipulated amounts arising from any one occurrence or event. Sirius Group has also entered into quota share treaties with reinsurers under which all risks meeting prescribed criteria are covered on a pro-rata basis. The amount of each risk ceded by Sirius Group is subject to maximum limits which vary by line of business and type of coverage. Although these contracts protect Sirius Group, these reinsurance arrangements do not relieve Sirius Group from its primary obligations to insureds.

Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability associated with the reinsured policies. The collectability of reinsurance recoverables is subject to the solvency of the reinsurers. Sirius Group is selective in regard to its reinsurers, principally placing reinsurance with those reinsurers with a strong financial condition, industry ratings, and underwriting ability. Management monitors the financial condition and ratings of its reinsurers on an ongoing basis.

Reinsurance premiums, commissions, expense reimbursements, and reserves related to reinsured business are accounted for on a basis consistent with those used in accounting for the original policies issued and the terms of the reinsurance contracts. Reinsurance premiums ceded are expensed over the period the reinsurance coverage is provided. Ceded unearned insurance and reinsurance premiums represent the portion of premiums ceded applicable to the unexpired term of policies in force. Funds held by ceding companies represent amounts due to Sirius Group in connection with certain assumed reinsurance agreements in which the ceding company retains a portion of the premium to provide security against future loss payments. The funds held by ceding companies are generally invested by the ceding company and a contractually agreed interest amount is credited to Sirius Group and recognized as investment income. Funds held under reinsurance treaties represent contractual payments due from Sirius Group that have been retained to secure such obligations.

Accruals for contingent commission liabilities are established for reinsurance contracts that provide for the stated commission percentage to increase or decrease based on the loss experience of the contract. Changes in the estimated liability for contingent commission arrangements are recorded as Insurance and reinsurance acquisition expenses. Accruals for contingent commission liabilities are determined through the review of the contracts that have these adjustable features and are estimated based on expected loss and LAE.

Derivative financial instruments
Sirius Group holds derivative financial instruments for both risk management and investment purposes. Sirius Group recognizes all derivatives as either assets or liabilities, measured at fair value, in the Consolidated Balance Sheets. Changes in the fair value of derivative instruments are recognized in current period pre-tax income.

Deferred software costs
Sirius Group capitalizes costs related to computer software developed for internal use during the application development stage of software development projects. These costs generally consist of certain external, payroll, and payroll-related costs. Sirius Group begins amortization of these costs once the project is completed and ready for its intended use. Amortization is on a straight-line basis and over a useful life of three to five years. As of December 31, 2018 and 2017, Sirius Group had unamortized deferred software costs of $9.3 million and $10.5 million, respectively. For the years ended December 31, 2018, 2017, and 2016, Sirius Group had amortization expenses of $4.8 million, $4.6 million, and $3.2 million, respectively, related to software developed for internal use.

Share-based compensation
Share-based compensation plans are accounted for in accordance with the Accounting Standards Codification ("ASC") Topic 718 "Compensation - Stock Compensation". Sirius Group recognizes the compensation expense for stock restricted share and performance share awards based on the fair value of the award on the date of grant over the requisite service period. Awards under both the 2016 Long Term Incentive Plan and 2018 Omnibus plan vest over three years. The Company has elected to recognize forfeitures as they occur rather than estimating service-based forfeitures over the requisite service period.

Defined benefit plans
Certain Sirius Group employees in Europe participate in defined benefit plans. The liability for the defined benefit plans that is reported on the Consolidated Balance Sheets is the current value of the defined benefit obligation at the end of the period, reduced by the fair value of the plan's managed assets, with adjustments for actuarial gains and losses. The defined benefit pension plan obligation is calculated annually by independent actuaries. The current value of the defined benefit obligation is determined through discounting of expected future cash flows, using interest rates determined by current market interest rates. The service costs and actuarial gains and losses on the defined benefit obligation and the fair value on the plan assets are recognized in the Consolidated Statements of Income.

Commission and other revenue recognition
Sirius Group recognizes agent commissions and other revenues when it has fulfilled all of its obligations necessary to earn the revenue and when it can both reliably estimate the amount of revenue, net of any amounts expected to be uncollectible, and any amounts associated with expected cancellations.

Federal and foreign income taxes
Some of Sirius Group's subsidiaries file consolidated tax returns in the United States. Sirius Group has subsidiaries in various jurisdictions, including but not limited to Sweden, the United Kingdom, and Luxembourg, which are subject to applicable taxes in those jurisdictions.

Deferred tax assets and liabilities are recorded when a difference between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts for tax purposes exists, and for other temporary differences. The deferred tax asset or liability is recorded based on tax rates expected to be in effect when the difference reverses. The deferred tax asset is recognized when it is more likely than not that it will be realized.

The Tax Cuts and Jobs Act (the "TCJA") which was enacted into law in the U.S. in December 31, 2017 includes a new base erosion and anti-abuse tax ("BEAT"), which is essentially a minimum tax that is potentially applicable to certain otherwise deductible payments made by U.S. entities to non-U.S. affiliates, including cross-border interest payments and reinsurance premiums. The statutory BEAT rate is 5% in 2018 and will rise to 10% in 2019-2025 and then 12.5% in 2026 and thereafter. The TCJA also includes provisions for Global Intangible Low-Taxed Income ("GILTI") under which taxes on foreign income are imposed on the excess of a deemed return on tangible assets of certain foreign subsidiaries. Consistent with accounting guidance, Sirius Group will treat BEAT as an in period tax charge when incurred in future periods for which no deferred taxes need to be provided and has made an accounting policy election to treat GILTI taxes in a similar manner.

Foreign currency exchange
The U.S. dollar is the functional currency for Sirius Group's businesses except for Sirius International Insurance Corporation ("Sirius International"), Lloyd's Syndicate 1945 ("Syndicate 1945"), several subsidiaries of IMG, and the Canadian reinsurance operations of Sirius America Insurance Company ("Sirius America"). Sirius Group also invests in securities denominated in foreign currencies. Assets and liabilities recorded in these foreign currencies are translated into U.S. dollars at exchange rates in effect at the balance sheet date, and revenues and expenses are converted using the average exchange rates for the period. Net foreign exchange gains and losses arising from the translation of functional currencies are reported in shareholder's equity, in Accumulated other comprehensive (loss). As of December 31, 2018 and 2017, Sirius Group had Net unrealized foreign currency translation losses of $201.8 million and $139.9 million, respectively, recorded in Accumulated other comprehensive (loss) on its Consolidated Balance Sheets.

Assets and liabilities relating to foreign operations are remeasured into the functional currency using current exchange rates; revenues and expenses are remeasured into the functional currency using the weighted average exchange rate for the period. The resulting exchange gains and losses are reported as a component of net income in the period in which they arise within Net realized investment gains (losses), Net unrealized investment (losses), and Net foreign exchange gains (losses).

The following rates of exchange for the U.S. dollar have been used for translation of assets and liabilities for subsidiaries whose functional currency is not the U.S. dollar at December 31, 2018 and 2017:

Currency	**Closing Rate 2018**	**Closing Rate 2017**
Swedish kronor	8.9397	8.2051
British pound	0.7850	0.7398
Euro	0.8734	0.8339
Canadian dollar	1.3614	1.2556

Goodwill and intangible assets
Goodwill represents the excess of the purchase price of an acquisition over the fair value of the identifiable net assets acquired and is assigned to the applicable reporting unit at acquisition. Goodwill is evaluated for impairment on an annual basis. Sirius Group initially evaluates goodwill using a qualitative approach to determine whether it is more likely than not that the fair value of goodwill is greater than its carrying value. If the results of the qualitative evaluation indicate that it is more likely than not that the carrying value of goodwill exceeds its fair value, Sirius Group performs the quantitative test for impairment.

Indefinite-lived intangible assets are evaluated for impairment similar to goodwill. Finite-lived intangible are amortized on a straight-line basis over their estimated useful lives. The amortization periods approximate the period over which Sirius Group expects to generate future net cash inflows from the use of these assets. All of these assets are subject to impairment testing for the impairment or disposal of long-lived assets when events or conditions indicate that the carrying value of an asset may not be fully recoverable from future cash flows.

If goodwill or intangible assets are impaired, such assets are written down to their fair values with the related expense recorded in Sirius Group's results of operations. (See **Note 10**.)

Non-controlling interests
Non-controlling interests consist of the ownership interests of non-controlling shareholders in consolidated subsidiaries, and are presented separately on the balance sheet.

Variable interest entities
Sirius Group consolidates a VIE when it has both the power to direct the activities of the VIE that most significantly impact its economic performance and either the obligation to absorb losses or the right to receive returns from the VIE that could potentially be significant to the VIE.

An entity in which Sirius Group holds a variable interest is a VIE if any of the following conditions exist: (a) the total equity investment at risk is not sufficient to permit the entity to finance its activities without additional subordinated financial support, (b) as a group, the holders of equity investment at risk lack either the direct or indirect ability through voting rights or similar rights to make decisions about an entity's activities that most significantly impact the entity's economic performance or the obligation to absorb the expected losses or right to receive the expected residual returns, or (c) the voting rights of some investors are disproportionate to their obligation to absorb the expected losses of the entity, their rights to receive the expected residual returns of the entity, or both, and substantially all of the entity's activities either involve or are conducted on behalf of an investor with disproportionately few voting rights. The primary beneficiary is defined as the variable interest holder that is determined to have the controlling financial interest as a result of having both (a) the power to direct the activities of a VIE that most significantly impact the economic performance of the VIE and (b) the obligation to absorb losses or right to receive benefits from the VIE that could potentially be significant to the VIE. At inception of the VIE, as well as following an event that requires reassessment, Sirius Group determines whether it is the primary beneficiary based on the facts and circumstances surrounding each entity. (See **Note 18**.)

Preference Shares
On May 24, 2007, the Company issued $250.0 million in non-cumulative perpetual preference shares with a $1,000 per share liquidation preference ("Preference shares"), and received $245.7 million of proceeds, net of $4.3 million of issuance costs and commissions. These shares were issued in an offering that was exempt from the registration requirements of the Securities Act of 1933. On October 25, 2017, the Company redeemed all of its outstanding 250,000 Fixed/Floating Perpetual Non-Cumulative Preference shares. The redemption price equaled the $1,000 liquidation preference per preference share.

Recently adopted changes in accounting principles

Definition of a business
Effective January 1, 2018, Sirius Group adopted Accounting Standards Update ("ASU") 2017-01, *Business Combinations: Clarifying the Definition of a Business* (ASC 805), which clarifies the definition of a business and affects the determination of whether acquisitions or disposals are accounted for as assets or as a business. Under the new guidance, when substantially all of the fair value of the assets is concentrated in a single identifiable asset or a group of similar identifiable assets, it is not a business. Sirius Group has applied the guidance in the update when determining the accounting treatment for transactions that have occurred during the year ended December 31, 2018. (See **Note 3**).

Financial instruments - recognition and measurement
Effective January 1, 2018, Sirius Group adopted ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities* (ASC 825-10). The new guidance modifies the guidance for financial instruments, including investments in equity securities. Under the new guidance, all equity securities with readily determinable fair values are required to be measured at fair value with changes therein recognized through current period earnings. In addition, the new guidance requires a qualitative assessment for equity securities without readily determinable fair values to identify impairment, and for impaired equity securities to be measured at fair value. Sirius Group measures its portfolio of investment securities at fair value with changes therein recognized through current period earnings and, accordingly, adoption did not have any impact on its consolidated financial statements.

Revenue recognition
Effective January 1, 2018, Sirius Group adopted ASU 2014-09, *Revenue from Contracts with Customers* (ASC 606), which modifies the guidance for revenue recognition. The scope of the new guidance excludes insurance contracts but is applicable to certain fee arrangements as well as commissions and other non-insurance revenues. This guidance impacts the timing of service fee recognition by IMG and ArmadaCorp Capital, LLC ("Armada"). Sirius Group used the modified retrospective transition approach to adopt this guidance, which resulted in the recognition of a cumulative effect of adoption as an adjustment to the beginning balance of retained earnings at the date of initial application of $1.6 million, net of tax.

Recent accounting pronouncements

Premium amortization on callable debt securities
In March 2017, the Financial Accounting Standards Board ("FASB") issued ASU 2017-08, *Premium Amortization on Purchased Callable Debt Securities* (ASC 310-20), which changes the amortization period for certain purchased callable debt securities. Under the new guidance, for investments in callable debt securities held at a premium, the premium will be amortized over the period to the earliest call date. The new guidance does not change the amortization period for callable debt securities held at a discount. The new guidance is effective for annual and interim periods beginning after December 15, 2018. We plan to adopt the standard on its effective date of January 1, 2019. We do not expect the standard to have a material impact on our reported consolidated financial condition, results of operations, cash flows or required disclosures.

Credit losses
In June 2016, the FASB issued ASU 2016-13, *Measurement of Credit Losses on Financial Instruments* (ASC 326), which establishes new guidance for the recognition of credit losses for financial assets measured at amortized cost. The new guidance, which applies to financial assets that have the contractual right to receive cash, including reinsurance receivables, requires reporting entities to estimate the credit losses expected over the life of a credit exposure using historical information, current information and reasonable and supportable forecasts that affect the collectability of the financial asset. The new guidance is effective for annual and interim periods beginning after December 15, 2019. We plan to adopt the standard on its effective date of January 1, 2020. We do not expect the standard to have a material impact on our reported consolidated financial condition, results of operations, cash flows or required disclosures.

Leases
In February 2016, the FASB issued ASU 2016-02, *Leases* (ASC 842). The new guidance requires lessees to recognize lease assets and liabilities on the balance sheet for both operating and financing leases, with the exception of leases with an original term of 12 months or less. Under existing guidance, recognition of lease assets and liabilities is not required for operating leases. The new guidance requires that lease assets and liabilities to be recognized and measured initially based on the present value of the lease payments. The new guidance is effective for annual and interim periods beginning after December 15, 2018. Sirius Group will adopt this guidance as of January 1, 2019. We estimate adoption of this standard will result in recognition of additional net lease assets and lease liabilities of approximately $37.7 million. We do not believe this standard will materially affect our consolidated net earnings.

Note 3. Significant transactions

WRM America Indemnity Company, Inc.

On August 16, 2018, Sirius Group acquired 100% ownership of WRM America Indemnity Company, Inc. ("WRM America") from WRM America Indemnity Holding Company, LLC for $16.9 million in cash. WRM America is a New York-domiciled insurer with a run-off book of business mainly comprised of general liability, educator's legal liability, automobile liability and physical damage, property and excess catastrophe liability. As part of the purchase of WRM America, Sirius Group acquired $3.1 million of indefinite lived intangible assets related to insurance licenses.

The Phoenix Holdings Ltd.

On July 2, 2018, Sirius Group terminated its share purchase agreement to acquire a controlling interest in The Phoenix Holdings Ltd. As a result of the termination, Sirius Group recognized an income statement charge for the $4.5 million call option it held during 2018.

IMG

On May 26, 2017, Sirius Ltd., the Company's indirect parent, acquired 100% ownership of IMG, through SAHC2. On June 29, 2018, SAHC2 was contributed to SBDA, a subsidiary of the Company. The contribution of SAHC2 to SBDA qualifies as a common control transaction and SAHC2's results of operations and cash flows for the year ended December 31, 2018 are included in Sirius Group's consolidated financial statements. In addition, the comparative information for the year ended December 31, 2017 has been revised to include SAHC2's financial position as at December 31, 2017 and results of operations and cash flows for the period SAHC2 was under common control.

The purchase of IMG was undertaken to expand on Sirius Group's existing Global Accident and Health ("Global A&H") platform and to accelerate the growth strategy of the Global A&H international insurance business, to add service fee revenues to Sirius Group's existing risk-transfer based insurance revenues, and to gain access to IMG's distribution networks and client base. Total consideration consisted of $250.8 million of cash, $100.0 million of Series A redeemable preference shares issued by Sirius Ltd., and up to $50.0 million of contingent consideration, payable in Series A redeemable preference shares, which was stated as $43.1 million at fair value at acquisition date, resulting in a total enterprise value of $393.9 million. Sirius Ltd. assumed certain IMG debt of $129.5 million ("Debt Assumption"), reducing its cash consideration by that amount and resulting in a total equity consideration of $264.4 million. Concurrently with the transaction, IMG's subsidiary International Medical Group - Stop-Loss, Inc. ("IMG – Stop Loss") was sold to Certus Management Group, Inc. ("Certus"). As part of the sale of IMG – Stop Loss, Sirius Group issued a secured promissory note of $9.0 million to Certus.

The following table summarizes the fair value of net assets acquired and allocation of purchase price of IMG, measured as of the acquisition date:

(Millions)	**Total**	**Useful Life**
Purchase price		
Cash paid	$ 250.8	
Series A redeemable preference shares	100.0	
Contingent consideration	43.1	
Total enterprise value	393.9	
Less: Debt assumed	(129.5)	
Total purchase price (a)	$ 264.4	
Assets acquired		
Total investments	$ 41.0	
Cash	10.5	
Accrued investment income	0.2	
Insurance and reinsurance premiums receivable	1.6	
Deferred acquisition costs	2.9	
Other assets	12.9	
Intangible asset – distribution relationships	91.0	13.0 years
Intangible asset – customer relationships	17.0	12.5 years
Intangible asset – trade names	27.0	
Intangible asset – technology	10.0	5.0 years
Total assets acquired	214.1	
Liabilities assumed		
Loss and loss adjustment expense reserves	14.3	
Unearned insurance and reinsurance premiums	9.8	
Deferred tax liability	55.9	
Debt	129.5	
Other liabilities	18.2	
Total liabilities assumed	227.7	
Net assets acquired (b)	(13.6)	
Goodwill (a)-(b)	**$ 278.0**	

The goodwill balance is primarily attributed to IMG's assembled workforce and access to the supplemental healthcare and medical travel insurance market. None of the goodwill recognized is expected to be deductible for income tax purposes.

During 2018, Sirius Group obtained $136.0 million, or 7%, of its gross written premiums through IMG. During 2017 and 2016, Sirius Group received 11% and 14% of its gross written premiums through IMG, respectively.

During 2017, IMG's revenues and net income after acquisition, inclusive of intangible asset amortization expenses, were $79.6 million and $13.3 million, respectively.

Armada

On April 3, 2017, Sirius Group purchased 100% of Armada and its subsidiaries from Armada Enterprises LLC ("Seller"). Armada is an insurance services and health care technology business that creates specialty employee benefit products and serves to strengthen health care coverage and access. The purchase of Armada was undertaken to expand and accelerate the growth of Sirius Group's Global A&H platform in the United States, to diversify Sirius Group's revenues to include fee based revenues, and to gain access to Armada's distribution networks. Total consideration for the acquisition consisted of (1) the purchase of 50% of Armada by Sirius Group for $123.4 million, and (2) the redemption by Armada of the remaining 50% held by Seller for a redemption price based on a three year contingent earn-out mechanism that could result in an additional payment to Seller of up to $125.0 million ("Armada Earnout"), with fair value of $79.1 million at acquisition date, resulting in a total enterprise value of $202.5 million.

The following table summarizes the fair value of net assets acquired and allocation of purchase price of Armada, measured as of the acquisition date:

(Millions)	Total	Useful Life
Purchase price		
Cash paid	$ 123.4	
Contingent consideration	79.1	
Total purchase price (a)	$ 202.5	
Assets acquired		
Restricted cash	$ 10.4	
Other assets	1.2	
Intangible asset – distribution relationships	60.0	22.5 years
Intangible asset – trade name	16.0	7.5 years
Intangible asset – technology	5.5	9.0 years
Total assets acquired	93.1	
Liabilities assumed		
Other liabilities	13.3	
Total liabilities assumed	13.3	
Net assets acquired (b)	79.8	
Goodwill (a)-(b)	**$ 122.7**	

The goodwill balance is primarily attributed to Armada's assembled workforce and access to the supplemental healthcare insurance market, and additional synergies to be realized in the future. The goodwill recognized is expected to be deductible for income tax purposes in the future. The contingent consideration is payable if EBITDA of Armada exceeds amounts defined in the redemption agreement. The Armada Earnout can be settled in the Company's common shares, subject to certain criteria. The Armada Earnout is subject to fair value measurement, which is a component of net income and reflected in Gain on revaluation of contingent consideration. In December 2017, Sirius Group settled approximately 82% of the Armada Earnout with the Seller for $30.6 million. At December 31, 2017, the remaining Armada Earnout liability was remeasured at a fair value of $13.3 million and is reflected in Other liabilities. As a result of the settlement and remeasurement of the Armada Earnout, Sirius Group recorded a $35.2 million gain in Gain on revaluation of contingent consideration in 2017. During 2018, Sirius Group settled $0.9 million of the Armada Earnout. At December 31, 2018 the Armada Earnout was remeasured at a fair value of $8.9 million and is reflected within Other liabilities. As a result of the remeasurement of the Armada Earnout, Sirius Group recorded a $3.5 million Gain on revaluation of contingent consideration in 2018.

During 2017, Armada's revenues and net income after acquisitions, inclusive of intangible asset amortization expenses, were $24.7 million and $9.7 million, respectively.

Mount Beacon

On May 17, 2016, Sirius Global Solutions Holding Company ("Sirius Global Solutions") and Florida Specialty Insurance Company partnered to form Florida Specialty Acquisition LLC ("FSA"). Sirius Global Solutions provided $15.8 million to acquire 100% of FSA's common shares. FSA acquired Mount Beacon Holdings, LLC and its subsidiaries including Mount Beacon Insurance Company ("Mount Beacon"). FSA was dissolved on September 21, 2017.

OneBeacon

On April 18, 2016, Sirius Group sold its investment in OneBeacon Insurance Group, Ltd. ("OneBeacon") at fair value to White Mountains Insurance Group ("White Mountains" or "former parent") for proceeds of $178.3 million in connection with the sale of Sirius Group to CM International Holding Pte. Ltd ("CMIG International") and recorded $22.1 million of Additional paid-in surplus for the excess of fair value over the equity method carrying value of OneBeacon. (See **Note 17.**).

Ashmere

On April 18, 2016, Sirius Global Solutions sold Ashmere Insurance Company to White Mountains for proceeds of $18.5 million in connection of the sale of Sirius Group by White Mountains.

Symetra

On February 1, 2016, Sirius Group sold its investment in Symetra Financial Corporation ("Symetra") for proceeds of $559.8 million, or $32.00 per share.

Note 4. Segment information

Sirius Group classifies its business into four reportable segments – Global Property, Global A&H, Specialty and Casualty ("Specialty & Casualty"), and Runoff and Other ("Runoff & Other"). The accounting policies of the reportable segments are the same as those used for the preparation of the Company's consolidated financial statements.

The Company's Global Property, Global A&H, Specialty & Casualty, and Runoff & Other reportable segments each have managers who are responsible for the overall profitability of their respective segments and who are directly accountable to the Company's chief operating decision maker, the Chief Executive Officer ("CEO") of the Company. The CEO assesses segment operating performance, allocates capital, and makes resource allocation decisions based on Technical profit (loss), Underwriting profit (loss), and Underwriting profit (loss), including net service fee revenue.

Segment results are shown prior to corporate eliminations. Corporate eliminations are shown to reconcile to consolidated Technical profit (loss), consolidated Underwriting profit (loss) and consolidated Underwriting profit (loss), including net service fee revenue.

Sirius Group does not allocate its assets by segment, with the exception of goodwill and intangible assets, and, accordingly, investment income is not allocated to each segment.

Global Property

Global Property consists of Sirius Group's underwriting lines of business which offer other property insurance and reinsurance, property catastrophe excess reinsurance, and agriculture reinsurance on a worldwide basis:

Other Property—Sirius Group participates in the broker market for property reinsurance treaties written on a proportional and excess of loss basis. For Sirius Group's international business, the book consists of treaty, written on both a proportional and excess of loss basis, facultative, and primary business, primarily in Europe, Asia and Latin America. In the United States, the book predominantly centers on significant participations on proportional and excess of loss treaties mostly in the excess and surplus lines segment of the market.

Property Catastrophe Excess—Property catastrophe excess of loss reinsurance treaties cover losses from catastrophic events. Sirius Group writes a

worldwide book with the largest concentration of exposure in Europe and the United States. The U.S. book written in Bermuda has a national account focus supporting principally the lower and/or middle layers of large capacity programs. Additionally, Stockholm writes a U.S. book mainly consisting of select small regional and standard lines carriers. The exposures written in the international book are diversified across many countries, regions, perils and layers.

Agriculture—Sirius Group provides stop-loss reinsurance coverage to companies writing U.S. government-sponsored multi-peril crop insurance ("MPCI"). Sirius Group's participation is net of the government's stop-loss reinsurance protection. Sirius Group also provides coverage for crop-hail and certain named perils when bundled with MPCI business. Sirius Group also writes agriculture business outside of the United States.

Global A&H

The Global A&H operating segment consists of Sirius Group's insurance, reinsurance, and managing general underwriting ("MGU") units (which include Armada and IMG) that offer accident and health products on a worldwide basis:

Accident and Health insurance and reinsurance—Sirius Group is an insurer of accident and health insurance business in the United States, either on an admitted or surplus lines basis, as well as international business written through wholly-owned IMG. Armada business is written on an admitted basis. Sirius Group also writes proportional and excess reinsurance treaties covering employer medical stop-loss for per person (specific) and per employer (aggregate) exposures. In addition, Sirius Group writes some medical, health, travel and personal accident coverages written on a treaty, facultative and primary basis.

Specialty & Casualty
Specialty & Casualty consists of Sirius Group's insurance and reinsurance underwriting units which offer specialty & casualty product lines on a worldwide basis. Specialty lines represent unique risks where the more difficult and unusual risks are underwritten. Because specialty lines tend to be the more unusual or higher risks, much of the market is characterized by a high degree of specialization:

Aviation & Space provides aviation insurance that covers loss of or damage to an aircraft and the aircraft operations' liability to passengers, cargo and hull as well as to third parties. Additionally, liability arising out of non-aircraft operations such as hangars, airports and aircraft products can be covered. Space insurance primarily covers loss of or damage to a satellite during launch and in orbit. The book consists of treaty, written on both a proportional and excess of loss basis, facultative, and primary business.

Marine provides marine reinsurance, primarily written on an excess of loss and proportional basis. Coverage offered includes damage to ships and goods in transit, marine liability lines, and offshore energy industry insurance. Sirius Group also writes yacht business, both on reinsurance and a primary basis. The marine portfolio is diversified across many countries and regions.

Trade Credit writes credit and bond reinsurance worldwide. The bulk of the business is traditional short-term commercial credit insurance, covering pre-agreed domestic and export sales of goods and services with typical coverage periods of 60 to 120 days. Losses under these policies are correlated to adverse changes in a respective country's gross national product.

Contingency underwrites contingency insurance for event cancellation and non-appearance, primarily on a primary policy and facultative reinsurance basis. Additionally, coverage for liabilities arising from contractual bonus, prize redemption and over-redemption is also offered. The contingency portfolio is diversified across many countries and regions.

Casualty underwrites a cross section of all casualty lines, including general liability, umbrella, auto, workers compensation, professional liability, and other specialty classes, written on a proportional, excess of loss, and primary basis.

Surety underwrites commercial surety bonds, including non-construction contract bonds, in a broad range of business segments in the United States.

Environmental underwrites a pure environmental insurance book in the United States consisting of four core products that revolve around pollution coverage, which are premises pollution liability, contractor's pollution liability, contractor's pollution and professional liability.

Runoff & Other
Runoff & Other consists of asbestos risks, environmental risks and other long-tailed liability exposures, and underwriting results from Sirius Global Solutions Holding Company ("Sirius Global Solutions") and its subsidiaries. Sirius Global Solutions is a Connecticut-based division of Sirius Group specializing in the acquisition and management of runoff liabilities for insurance and reinsurance companies, both in the United States and internationally.

The following tables summarize the segment results for the years ended December 31, 2018, 2017, and 2016:

	For the year ended December 31, 2018					
(Millions)	**Global Property**	**Global A&H**	**Specialty & Casualty**	**Runoff & Other**	**Corporate Elimination**	**Total**
Gross written premiums	$ 962.4	$ 500.6	$ 325.1	$ 32.9	$ -	$ 1,821.0
Net written premiums	$ 655.0	$ 379.8	$ 292.7	$ 29.6	$ -	$ 1,357.1
Net earned insurance and reinsurance premiums	$ 636.0	$ 357.6	$ 239.5	$ 29.2	$ -	$ 1,262.3
Loss and allocated LAE[(1)]	(518.2)	(189.0)	(142.9)	(13.0)	-	(863.1)
Insurance and reinsurance acquisition expenses	(121.1)	(109.7)	(65.5)	(2.8)	43.7	(255.4)
Technical profit (loss)	**(3.3)**	**58.9**	**31.1**	**13.4**	**43.7**	**143.8**
Unallocated LAE[(2)]	(10.5)	(5.9)	(5.9)	(1.6)	(13.0)	(36.9)
Other underwriting expenses	(68.2)	(27.4)	(28.2)	(6.3)	(16.1)	(146.2)
Underwriting (loss) income	**(82.0)**	**25.6**	**(3.0)**	**5.5**	**14.6**	**(39.3)**
Service fee revenue[(3)]	-	115.7	-	-	(44.7)	71.0
Managing general underwriter unallocated LAE[(4)]	-	(14.0)	-	-	14.0	-
Managing general underwriter other underwriting expenses[(5)]	-	(16.1)	-	-	16.1	-
General and administrative expenses, MGU + Runoff & Other[(6)]	-	(53.6)	-	(3.1)	-	(56.7)
Underwriting (loss) income, including net service fee income	**(82.0)**	**57.6**	**(3.0)**	**2.4**	**-**	**(25.0)**
Net investment income						70.9
Net realized investment gains (losses)						2.3
Net unrealized investment (losses) gains						(23.1)
Net foreign exchange gains (losses)						22.7
Gain on revaluation of contingent consideration						3.5
Other revenue[(7)]						0.2
General and administrative expenses[(8)]						(7.6)
Intangible asset amortization expenses						(15.8)
Impairment of intangible assets						(8.0)
Interest expense on debt						(30.8)
Pre-tax income (loss)						**$ (10.7)**
Underwriting Ratios						
Loss ratio	83.1%	54.5%	62.1%	NM	NM	71.3%
Acquisition expense ratio	19.0%	30.7%	27.3%	NM	NM	20.2%
Other underwriting expense ratio	10.7%	7.7%	11.8%	NM	NM	11.6%
Combined ratio [(9)]	112.8%	92.9%	101.2%	NM	NM	103.1%
Goodwill and intangible assets[(10)]	$ -	$ 588.1	$ -	$ 8.1	$ -	$ 596.2

[(1)]Loss and allocated LAE are part of Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income (the sum of Loss and allocated LAE and Unallocated LAE is equal to Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income).

[(2)]Unallocated LAE are part of Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income (the sum of Loss and allocated LAE and Unallocated LAE is equal to Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income).

[(3)]Service fee revenue is part of Other revenue on the Consolidated Statements of (Loss) Income (the sum of Service fee revenue and Other revenue is equal to Other revenue on the Consolidated Statements of (Loss) Income).

[(4)]Managing general underwriter unallocated LAE represents IMG and Armada generated operating expenses following their integration with the Accident and Health insurance and reinsurance underwriting unit, representing costs associated with the claims process. In prior periods, all Armada and IMG expenses were disclosed within General and administrative expenses, MGU + Runoff & Other.

[(5)]Managing general underwriter other underwriting expenses represent IMG and Armada generated operating expenses following their integration with the Accident and Health insurance and reinsurance underwriting unit, representing costs associated with the underwriting process. In prior periods, all Armada and IMG expenses were disclosed within General and administrative expenses, MGU + Runoff & Other.

[(6)]General and administrative expenses, MGU + Runoff & Other is part of General and administrative expenses on the Consolidated Statements of (Loss) Income (the sum of General and administrative expenses, MGU + Runoff & Other and General and administrative expenses is equal to General and administrative expenses on the Consolidated Statements of (Loss) Income).

*[(7)]Other revenue is presented net of Service fee revenue and is comprised mainly of gains (losses) from derivatives (see **Note 13**) and the termination of the call option to purchase The Phoenix Holdings, Ltd. (the sum of Service fee revenue and Other revenue is equal to Other revenue on the Consolidated Statements of (Loss) Income).*

[(8)]General and administrative expenses are presented net of General and administrative expenses, MGU + Runoff & Other (the sum of General and administrative expenses, MGU + Runoff & Other and General and administrative expenses is equal to General and administrative expenses on the Consolidated Statements of (Loss) Income).

[(9)]Ratios considered not meaningful ("NM") to Runoff & Other and Corporate Elimination.

[(10)]Sirius Group does not allocate its assets by segment, with the exception of goodwill and intangible assets.

	For the year ended December 31, 2017					
(Millions)	**Global Property**	**Global A&H**	**Specialty & Casualty**	**Runoff & Other**	**Corporate Elimination**	**Total**
Gross written premiums	$ 732.1	$ 494.6	$ 218.1	$ (5.5)	$ -	$ 1,439.3
Net written premiums	$ 556.2	$ 341.5	$ 193.0	$ (0.5)	$ -	$ 1,090.2
Net earned insurance and reinsurance premiums	$ 564.4	$ 306.8	$ 163.2	$ 0.9	$ -	$ 1,035.3
Loss and allocated LAE[(1)]	(499.5)	(175.0)	(99.6)	(11.0)	-	(785.1)
Insurance and reinsurance acquisition expenses	(112.9)	(89.6)	(41.1)	3.5	42.9	(197.2)
Technical profit (loss)	**(48.0)**	**42.2**	**22.5**	**(6.6)**	**42.9**	**53.0**
Unallocated LAE[(2)]	(12.9)	(4.8)	(5.3)	(3.1)	-	(26.1)
Other underwriting expenses	(63.3)	(23.4)	(16.5)	(2.9)	-	(106.1)
Underwriting (loss) income	**(124.2)**	**14.0**	**0.7**	**(12.6)**	**42.9**	**(79.2)**
Service fee revenue[(3)]	-	65.9	-	-	(42.9)	23.0
Managing general underwriter unallocated LAE[(4)]	-	-	-	-	-	-
Managing general underwriter other underwriting expenses[(5)]	-	-	-	-	-	-
General and administrative expenses, MGU + Runoff & Other[(6)]	-	(44.8)	-	(4.0)	-	(48.8)
Underwriting (loss) income, including net service fee income	**(124.2)**	**35.1**	**0.7**	**(16.6)**	**-**	**(105.0)**
Net investment income						56.5
Net realized investment gains (losses)						(27.4)
Net unrealized investment (losses) gains						(23.3)
Net foreign exchange gains (losses)						9.5
Gain on revaluation of contingent consideration						35.2
Other revenue[(7)]						(2.3)
General and administrative expenses[(8)]						(30.2)
Intangible asset amortization expenses						(10.2)
Impairment of intangible assets						(5.0)
Interest expense on debt						(22.4)
Pre-tax income (loss)						**$ (124.6)**
Underwriting Ratios						
Loss ratio	90.8%	58.6%	64.3%	NM	NM	78.4%
Acquisition expense ratio	20.0%	29.2%	25.2%	NM	NM	19.0%
Other underwriting expense ratio	11.2%	7.6%	10.1%	NM	NM	10.2%
Combined ratio [(9)]	122.0%	95.4%	99.6%	NM	NM	107.6%
Goodwill and intangible assets[(10)]	$ -	$ 612.3	$ -	$ 5.0	$ -	$ 617.3

[(1)]*Loss and allocated LAE are part of Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income (the sum of Loss and allocated LAE and Unallocated LAE is equal to Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income).*

[(2)]*Unallocated LAE are part of Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income (the sum of Loss and allocated LAE and Unallocated LAE is equal to Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income).*

[(3)]*Service fee revenue is part of Other revenue on the Consolidated Statements of (Loss) Income (the sum of Service fee revenue and Other revenue is equal to Other revenue on the Consolidated Statements of (Loss) Income).*

[(4)]*Managing general underwriter unallocated LAE represents IMG and Armada generated operating expenses following their integration with the Accident and Health insurance and reinsurance underwriting unit, representing costs associated with the claims process. In prior periods, all Armada and IMG expenses were disclosed within General and administrative expenses, MGU + Runoff & Other.*

[(5)]*Managing general underwriter other underwriting expenses represent IMG and Armada generated operating expenses following their integration with the Accident and Health insurance and reinsurance underwriting unit, representing costs associated with the underwriting process. In prior periods, all Armada and IMG expenses were disclosed within General and administrative expenses, MGU + Runoff & Other.*

[(6)]*General and administrative expenses, MGU + Runoff & Other is part of General and administrative expenses on the Consolidated Statements of (Loss) Income (the sum of General and administrative expenses, MGU + Runoff & Other and General and administrative expenses is equal to General and administrative expenses on the Consolidated Statements of (Loss) Income).*

[(7)]*Other revenue is presented net of Service fee revenue and is comprised mainly of gains (losses) from derivatives (see* ***Note 13****) (the sum of Service fee revenue and Other revenue is equal to Other revenue on the Consolidated Statements of (Loss) Income).*

[(8)]*General and administrative expenses are presented net of General and administrative expenses, MGU + Runoff & Other (the sum of General and administrative expenses, MGU + Runoff & Other and General and administrative expenses is equal to General and administrative expenses on the Consolidated Statements of (Loss) Income).*

[(9)]*Ratios considered not meaningful ("NM") to Runoff & Other and Corporate Elimination.*

[(10)]*Sirius Group does not allocate its assets by segment, with the exception of goodwill and intangible assets.*

	For the year ended December 31, 2016					
(Millions)	**Global Property**	**Global A&H**	**Specialty & Casualty**	**Runoff & Other**	**Corporate Elimination**	**Total**
Gross written premiums	$ 634.9	$ 436.1	$ 170.7	$ 27.3	$ -	$ 1,269.0
Net written premiums	$ 514.2	$ 277.6	$ 137.4	$ 8.9	$ -	$ 938.1
Net earned insurance and reinsurance premiums	$ 481.8	$ 272.2	$ 135.2	$ 0.9	$ -	$ 890.1
Loss and allocated LAE[(1)]	(256.6)	(164.8)	(71.2)	(2.6)	-	(495.2)
Insurance and reinsurance acquisition expenses	(100.3)	(71.7)	(37.7)	(0.6)	-	(210.3)
Technical profit (loss)	**124.9**	**35.7**	**26.3**	**(2.3)**	**-**	**184.6**
Unallocated LAE[(2)]	(11.9)	(6.8)	(4.4)	(1.0)	-	(24.1)
Other underwriting expenses	(65.1)	(23.3)	(15.1)	(3.8)	-	(107.3)
Underwriting (loss) income	**47.9**	**5.6**	**6.8**	**(7.1)**	**-**	**53.2**
Service fee revenue[(3)]	-	-	-	4.3	-	4.3
Managing general underwriter unallocated LAE[(4)]	-	-	-	-	-	-
Managing general underwriter other underwriting expenses[(5)]	-	-	-	-	-	-
General and administrative expenses, MGU + Runoff & Other[(6)]	-	-	-	(6.2)	-	(6.2)
Underwriting (loss) income, including net service fee income	**47.9**	**5.6**	**6.8**	**(9.0)**	**-**	**51.3**
Net investment income						56.4
Net realized investment gains (losses)						288.1
Net unrealized investment (losses) gains						(238.2)
Net foreign exchange gains (losses)						(10.9)
Gain on revaluation of contingent consideration						-
Other revenue[(7)]						4.7
General and administrative expenses[(8)]						(42.4)
Intangible asset amortization expenses						-
Impairment of intangible assets						-
Interest expense on debt						(34.6)
Pre-tax income (loss)						**$ 74.4**
Underwriting Ratios						
Loss ratio	55.7%	63.0%	55.9%	NM	NM	58.3%
Acquisition expense ratio	20.8%	26.3%	27.9%	NM	NM	23.6%
Other underwriting expense ratio	13.5%	8.6%	11.2%	NM	NM	12.1%
Combined ratio [(9)]	90.0%	97.9%	95.0%	NM	NM	94.0%
Goodwill and intangible assets[(10)]	$ -	$ -	$ -	$ 5.0	$ -	$ 5.0

[(1)]Loss and allocated LAE are part of Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income (the sum of Loss and allocated LAE and Unallocated LAE is equal to Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income).
[(2)]Unallocated LAE are part of Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income (the sum of Loss and allocated LAE and Unallocated LAE is equal to Loss and loss adjustment expenses on the Consolidated Statements of (Loss) Income).
[(3)]Service fee revenue is part of Other revenue on the Consolidated Statements of (Loss) Income (the sum of Service fee revenue and Other revenue is equal to Other revenue on the Consolidated Statements of (Loss) Income).
[(4)]Managing general underwriter unallocated LAE represents IMG and Armada generated operating expenses following their integration with the Accident and Health insurance and reinsurance underwriting unit, representing costs associated with the claims process. In prior periods, all Armada and IMG expenses were disclosed within General and administrative expenses, MGU + Runoff & Other.
[(5)]Managing general underwriter other underwriting expenses represent IMG and Armada generated operating expenses following their integration with the Accident and Health insurance and reinsurance underwriting unit, representing costs associated with the underwriting process. In prior periods, all Armada and IMG expenses were disclosed within General and administrative expenses, MGU + Runoff & Other.
[(6)]General and administrative expenses, MGU + Runoff & Other is part of General and administrative expenses on the Consolidated Statements of (Loss) Income (the sum of General and administrative expenses, MGU + Runoff & Other and General and administrative expenses is equal to General and administrative expenses on the Consolidated Statements of (Loss) Income).
*[(7)]Other revenue is presented net of Service fee revenue and is comprised mainly of gains (losses) from derivatives (see **Note 13**) (the sum of Service fee revenue and Other revenue is equal to Other revenue on the Consolidated Statements of (Loss) Income).*
[(8)]General and administrative expenses are presented net of General and administrative expenses, MGU + Runoff & Other (the sum of General and administrative expenses, MGU + Runoff & Other and General and administrative expenses is equal to General and administrative expenses on the Consolidated Statements of (Loss) Income).
[(9)]Ratios considered not meaningful ("NM") to Runoff & Other and Corporate Elimination.
[(10)]Sirius Group does not allocate its assets by segment, with the exception of goodwill and intangible assets.

Note 5. Reserves for unpaid losses and loss adjustment expenses

Sirius Group establishes loss and LAE reserves that are estimates of future amounts needed to pay claims and related expenses for events that have already occurred. Sirius Group also obtains reinsurance whereby another reinsurer contractually agrees to indemnify Sirius Group for all or a portion of the reinsurance risks underwritten by Sirius Group. Such arrangements, where one reinsurer provides reinsurance to another reinsurer, are usually referred to as "retrocessional reinsurance" arrangements. Sirius Group establishes estimates of amounts recoverable from retrocessional reinsurance in a manner consistent with the loss and LAE liability associated with reinsurance contracts offered to its customers (the "ceding companies"), net of an allowance for uncollectible amounts. Net reinsurance loss reserves represent loss and LAE reserves reduced by retrocessional reinsurance recoverable on unpaid losses.

In addition to those factors which give rise to inherent uncertainties in establishing loss and LAE reserves, the inherent uncertainties of estimating such reserves are even greater for the reinsurer, due primarily to: (1) the claim-tail for reinsurers and insurers working through MGUs being further extended because claims are first reported to either the original primary insurance company or the MGU and then through one or more intermediaries to reinsurers, (2) the diversity of loss development patterns among different types of reinsurance treaties, facultative contracts or direct insurance contracts, (3) the necessary reliance on the ceding companies, intermediaries, and MGUs for information regarding reported claims and (4) the differing reserving practices among ceding companies and MGUs.

As with insurance reserves, the process of estimating reinsurance reserves involves a considerable degree of judgment by management and, as of any given date, is inherently uncertain. Based on the above, such uncertainty may be larger relative to the reserves for a company that principally writes reinsurance compared to an insurance company, and certainty may take a longer time to emerge.

Upon notification of a loss from an insured (typically a ceding company), Sirius Group establishes case reserves, including LAE reserves, based upon Sirius Group's share of the amount of reserves reported by the insured and Sirius Group's independent evaluation of the loss. In cases where available information indicates that reserves reported by a ceding company are inadequate or excessive, Sirius Group establishes case reserves or incurred but not reported ("IBNR") in excess of or below its share of the reserves reported by the ceding company. Also, in certain instances, Sirius Group may decide not to establish case reserves or IBNR, when the information available indicates that reserves established by ceding companies are not adequately supported. In addition, specific claim information reported by insureds or obtained through claim audits can alert management to emerging trends such as changing legal interpretations of coverage and liability, claims from unexpected sources or classes of business, and significant changes in the frequency or severity of individual claims where customary. Generally, ceding company audits are not customary outside the United States. This information is often used to supplement estimates of IBNR.

Generally, initial actuarial estimates of IBNR reserves not related to a specific event are based on the loss ratio method applied to each class of business. Sirius Group regularly reviews the adequacy of its recorded reserves by using a variety of generally accepted actuarial methods, including historical incurred and paid loss development methods. Estimates of the initial expected ultimate losses involve management judgment and are based on historical information for that class of business, which includes loss ratios, market conditions, changes in pricing and conditions, underwriting changes, changes in claims emergence, and other factors that may influence expected ultimate losses. If actual loss activity differs substantially from expectations, an adjustment to recorded reserves may be warranted. As time passes, loss reserve estimates for a given year will rely more on actual loss activity and historical patterns than on initial loss ratio assumptions.

The actuarial methods are used to calculate a point estimate of loss and LAE reserves for each company within Sirius Group. These point estimates are then aggregated to produce an actuarial point estimate for Sirius Group. Once a point estimate is established, Sirius Group's actuaries estimate loss reserve ranges to measure the sensitivity of the actuarial assumptions used to set the point estimates. These ranges are calculated from historical variations in loss ratios, payment, and reporting patterns by class and type of business. Management then establishes an estimate for the carried loss and LAE reserves shown in the financial statement. The management selection is within the range of loss reserve estimates provided by Sirius Group's actuaries.

Loss and Loss Adjustment Expense Reserve Summary

The following table summarizes the loss and LAE reserve activities of Sirius Group for the years ended December 31, 2018, 2017, and 2016:

(Millions)	**2018**	**2017**	**2016**
Gross beginning balance	**$ 1,898.5**	**$ 1,620.1**	**$ 1,644.4**
Less beginning reinsurance recoverable on unpaid losses	(319.7)	(291.5)	(283.1)
Net loss and LAE reserve balance	1,578.8	1,328.6	1,361.3
Loss and LAE reserves acquired [(1)]	0.2	14.3	9.8
Losses and LAE incurred relating to:			
Current year losses	907.3	811.8	583.0
Prior years losses	(7.3)	(0.6)	(63.7)
Total net incurred losses and LAE	**900.0**	**811.2**	**519.3**
Accretion of fair value adjustment to net loss and LAE reserves	0.1	0.1	0.5
Foreign currency translation adjustment to net loss and LAE reserves	(20.9)	36.8	(14.0)
Loss and LAE paid relating to:			
Current year losses	251.4	222.8	207.6
Prior years losses	540.3	389.5	340.7
Total loss and LAE payments	**791.7**	**612.3**	**548.3**
Net ending balance	1,666.5	1,578.8	1,328.6
Plus ending reinsurance recoverable on unpaid losses	350.2	319.7	291.5
Gross ending balance	**$ 2,016.7**	**$ 1,898.5**	**$ 1,620.1**

[(1)] *Loss and LAE reserves acquired in 2018 relate to the purchase of WRM America; 2017 relate to the purchase of IMG; 2016 relates to the purchase of Mount Beacon.*

Loss and LAE development - 2018

During the year ended December 31, 2018, Sirius Group had net favorable prior year loss reserve development of $7.3 million. During 2018, Sirius Group strengthened its Global Property loss reserves by $43.6 million in Other Property ($34.9 million) and Property Catastrophe Excess ($13.2 million), resulting from higher than expected loss reporting from recent accident years, including $21.4 million from Hurricanes Harvey, Irma, and Maria. Specialty & Casualty had net favorable loss reserve development of $18.3 million, primarily driven by Aviation & Space ($7.9 million) and Marine ($6.8 million). The net favorable prior year loss reserve development of $17.6 million for Runoff & Other included reductions in World Trade Center claims in response to revised information received by the Company and runoff Casualty reserves. Global A&H recorded $15.0 million of net favorable loss reserve development due to lower than expected claims activity.

Loss and LAE development - 2017

During the year ended December 31, 2017, Sirius Group had net favorable prior year loss reserve development of $0.6 million. During 2017, Sirius Group strengthened its asbestos loss reserves by $59.0 million, which was offset by reductions of other runoff claims reserves of $45.7 million, which is reflected in the Runoff & Other segment. The Specialty & Casualty segment had net favorable prior year loss development of $12.1 million, which is comprised of the Marine ($5.4 million), Trade credit ($4.2 million), Aviation & Space ($1.7 million), and Contingency ($0.8 million) operating segments.

Loss and LAE development - 2016

During the year ended December 31, 2016, Sirius Group had net favorable prior year loss reserve development of $63.7 million. The major reductions in loss reserve estimates were recognized in the Global Property ($26.8 million) and Specialty & Casualty ($24.8 million) segments. The decrease in Global Property was driven by Other Property ($23.4 million) due primarily to reductions in the ultimate loss estimates for natural catastrophes that occurred between 2010 and 2015 due to lower than expected claims activity. The decrease in Specialty & Casualty was mainly due to Aviation & Space and Marine with decreases of $11.5 million and $7.2 million, respectively. Asbestos losses of $13.6 million in 2016 were offset by other long tail favorable loss reserve development in Runoff & Other.

Fair value adjustment to loss and LAE reserves

In connection with purchase accounting for acquisitions, Sirius Group is required to adjust loss and LAE reserves and the related reinsurance recoverables to fair value on their respective acquired balance sheets. The net reduction to loss and LAE reserves is being recognized through an income statement charge ratably with and over the period the claims are settled and is recorded within General and administrative expenses. Sirius Group recognized $0.1 million, $0.1 million, and $0.5 million of such charges during 2018, 2017, and 2016, respectively. As of December 31, 2018, the pre-tax un-accreted adjustment was $2.7 million.

Asbestos and Environmental Loss and Loss Adjustment Expense Reserve Activity

In the Runoff & Other segment, Sirius Group's reserves include provisions made for claims that assert damages from asbestos and environmental ("A&E") related exposures primarily at Sirius America. Asbestos claims relate primarily to injuries asserted by those who came in contact with asbestos or products containing asbestos. Environmental claims relate primarily to pollution and related clean-up cost obligations, particularly as mandated by U.S. federal and state environmental protection agencies. In addition to the factors described above regarding the reserving process, Sirius Group estimates its A&E reserves based upon, among other factors, facts surrounding reported cases and exposures to claims, such as policy limits and deductibles, current law, past and projected claim activity, and past settlement values for similar claims, as well as analysis of industry studies and events, such as recent settlements and asbestos-related bankruptcies. The cost of administering A&E claims, which is an important factor in estimating loss reserves, tends to be higher than in the case of non-A&E claims due to the higher legal costs typically associated with A&E claims.

Sirius Group's A&E exposure is primarily from reinsurance contracts written between 1974 through 1985 by acquired companies, mainly MONY Reinsurance Company, which was acquired in 1991, and Christiania General Insurance Company, which was acquired in 1996. The exposures are mostly higher layer excess of loss treaty and facultative coverages with relatively low limits exposed for each claim.

The acquisition of companies having modest portfolios of A&E exposure has been typical of several prior Sirius Global Solutions transactions and is likely to be an element of at least some future acquisitions. However, the acquisition of new A&E liabilities is undertaken only after careful due diligence and utilizing conservative reserving assumptions in relation to industry benchmarks. In the case of portfolios acquired previously by Sirius Global Solutions, the exposures arise almost entirely from old assumed reinsurance contracts having small limits of liability.

Sirius Group recorded a decrease of $6.9 million, an increase of $59.0 million, and an increase of $13.6 million of asbestos-related incurred losses and LAE on its asbestos reserves in 2018, 2017, and 2016, respectively. The 2018 decrease was driven by favorable loss reserve development primarily due to benign claims activity on the Sirius Global Solutions portfolio. The 2017 increase was primarily a result of an in-depth analysis of Sirius Group's loss reserves undertaken in the second quarter of 2017. The 2016 increase was primarily the result of management's monitoring of a variety of metrics including actual paid and reported claims activity.

Sirius Group recorded $4.0 million, $6.1 million, and $0.4 million of environmental losses in 2018, 2017, and 2016, respectively, on its already existing reserves.

Sirius Group's net reserves for A&E losses were $200.3 million and $220.6 million as of December 31, 2018 and 2017, respectively. Sirius Group's asbestos three-year net paid survival ratio was approximately 10.2 years as of December 31, 2018 and 2017. Sirius Group's environmental three-year net paid survival ratio was approximately 4.2 years and 4.3 years as of December 31, 2018 and 2017, respectively.

Sirius Group's reserves for A&E losses as of December 31, 2018 represent management's best estimate of its ultimate liability based on information currently available. However, as case law expands, medical and clean-up costs increase, and industry settlement practices change, Sirius Group may be subject to asbestos and environmental losses beyond currently estimated amounts. Sirius Group cannot reasonably estimate at the present time loss reserve additions arising from any such future adverse developments and cannot be sure that allocated loss reserves will be sufficient to cover additional liability arising from any such adverse developments.

The following table summarizes reported A&E loss and LAE reserve activities (gross and net of reinsurance) for the years ended December 31, 2018, 2017, and 2016:

	2018		2017		2016	
(Millions)	**Gross**	**Net**	**Gross**	**Net**	**Gross**	**Net**
Asbestos:						
Beginning balance	$ 259.2	$ 204.6	$ 187.0	$ 166.4	$ 193.5	$ 172.9
Incurred losses and LAE	(6.9)	(6.9)	96.9	59.0	15.3	13.6
Paid losses and LAE	(15.5)	(13.3)	(24.7)	(20.8)	(21.8)	(20.1)
Ending balance	236.8	184.4	259.2	204.6	187.0	166.4
Environmental:						
Beginning balance	16.7	16.0	18.5	13.9	21.5	16.8
Incurred losses and LAE	4.0	4.0	2.9	6.1	0.4	0.4
Paid losses and LAE	(4.0)	(4.1)	(4.7)	(4.0)	(3.4)	(3.3)
Ending balance	16.7	15.9	16.7	16.0	18.5	13.9
Total asbestos and environmental:						
Beginning balance	275.9	220.6	205.5	180.3	215.0	189.7
Incurred losses and LAE	(3.0)	(2.9)	99.8	65.1	15.7	14.0
Paid losses and LAE	(19.5)	(17.4)	(29.4)	(24.8)	(25.2)	(23.4)
Ending balance	**$ 253.4**	**$ 200.3**	**$ 275.9**	**$ 220.6**	**$ 205.5**	**$ 180.3**

Net loss reserves by type

The following tables present Sirius Group's loss and LAE reserves, net of reinsurance, by type as of December 31, 2018 and 2017:

(Millions)	**2018**	**2017**
Case Reserve	$ 924.5	$ 833.9
IBNR Reserve	742.0	744.9
Loss and loss adjustment expense reserves, net of reinsurance	**$ 1,666.5**	**$ 1,578.8**

Reconciliation of liabilities for unpaid loss and LAE

The following table summarizes the ending liabilities for unpaid loss and LAE, net of reinsurance for each of Sirius Group's segments as of December 31, 2018:

(Millions) **Liabilities for unpaid loss and LAE, net of reinsurance**	**As of December 31, 2018**
Unpaid and allocated LAE reserves, net of reinsurance	
Other Property	$ 450.8
Property Catastrophe Excess	245.7
Agriculture	40.9
Global Accident & Health	148.2
Aviation & Space	86.6
Trade credit	42.1
Environmental	0.4
Marine	58.9
Surety	4.5
Contingency	13.7
Casualty	65.4
Runoff & Other	473.7
Total unpaid and allocated LAE reserves, net of reinsurance	1,631.0
Unallocated LAE	35.5
Total unpaid loss and LAE reserves, net of reinsurance	1,666.5
Reinsurance recoverable on unpaid losses	
Other Property	104.6
Property Catastrophe Excess	53.4
Agriculture	0.5
Global Accident & Health	45.0
Aviation & Space	18.6
Trade credit	10.9
Environmental	0.4
Marine	8.9
Surety	0.5
Contingency	4.9
Casualty	-
Runoff & Other	102.5
Total reinsurance recoverable on unpaid losses	350.2
Total unpaid loss and LAE reserves	**$ 2,016.7**

The following table groupings, reflecting the Other Property, Property Catastrophe Excess, Agriculture, Accident & Health, Aviation & Space, Trade credit, Environmental, Marine, Surety, Contingency, Casualty, and Runoff & Other lines of business include three sections.

The first table (top section of grouping) presents, for each of the previous 10 accident years (1) cumulative total undiscounted incurred loss and allocated LAE, net of reinsurance, as of each of the previous 10 year-end evaluations, (2) total IBNR plus expected development on reported claims as of December 31, 2018, and (3) the cumulative number of reported claims as of December 31, 2018. The net loss reserves for losses and loss expenses related to the acquisitions described in **Note 3** have been incorporated within the ten year short duration tables on a prospective basis. Sirius Group provides treaty reinsurance for a significant portion and across all lines of its business. Sirius Group does not receive, and as such does not maintain claims count information associated with many of its reinsurance contracts, especially proportional covers. As such, Sirius Group has determined that it is impracticable to provide this information.

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The second table (middle section grouping) presents cumulative paid loss and allocated LAE, net of reinsurance for each of the previous 10 accident years, as of each of the previous 10 year-end evaluations. Also included in this table is a calculation of the liability for loss and allocated LAE as of December 31, 2018 which is then included in the reconciliation to the consolidated balance sheet presented above. The liability as of December 31, 2018 is calculated as the cumulative incurred loss and allocated LAE from the first table less the cumulative paid loss and allocated from the second table, plus any outstanding liabilities from accident years prior to 2009.

The third table (bottom section of grouping) is supplementary information about the average historical claims duration as of December 31, 2018. It shows the weighted average annual percentage payout of incurred loss and allocated LAE by accident year as of each age. For example, the first column is calculated as the incremental paid loss and allocated LAE in the first calendar year for each given accident year (e.g. calendar year 2010 for accident year 2010, calendar year 2011 for accident year 2011) divided by the cumulative incurred loss and allocated LAE as of December 31, 2018 for that accident year. The resulting ratios are weighted together using cumulative incurred loss and allocated LAE as of December 31, 2018.

Other Property
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**	**Total IBNR liabilities plus expectec development on reported claims**	**Cumulative number of reported claims**
2009	118.3	108.7	98.3	94.2	94.1	93.1	95.8	94.6	92.8	93.1	0.2	NA
2010		156.1	153.4	144.7	145.3	140.4	139.5	138.8	137.2	136.9	1.4	NA
2011			163.5	150.9	141.7	133.7	131.8	132.5	132.8	131.6	0.1	NA
2012				163.4	150.0	144.8	140.4	135.7	133.7	133.6	1.6	NA
2013					131.2	127.4	116.6	113.0	112.7	112.2	(0.2)	NA
2014						115.0	117.6	115.1	115.3	113.0	1.0	NA
2015							141.2	133.3	135.6	135.5	0.6	NA
2016								196.2	215.2	219.8	0.6	NA
2017									334.2	370.9	46.5	NA
2018										273.1	97.4	NA
									Total	**1,719.7**		

Other Property
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**
2009	22.6	59.5	78.7	85.4	89.4	90.5	90.2	90.9	90.9	90.1
2010		31.2	88.7	115.6	123.3	128.2	130.3	130.8	130.9	130.7
2011			26.9	79.5	103.3	116.2	122.3	124.7	127.4	127.1
2012				20.1	85.4	108.2	116.5	119.8	125.1	126.0
2013					27.5	72.0	96.3	102.7	106.0	106.6
2014						19.0	69.4	96.2	104.5	106.7
2015							31.0	93.7	115.2	124.9
2016								31.5	128.9	181.8
2017									58.8	223.5
2018										55.7
									Total	**1,273.1**
									All outstanding liabilities before 2009, net of reinsurance	4.2
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**450.8**

Other Property

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	18.9%	43.7%	20.3%	7.0%	3.3%	1.9%	0.7%	0.1%	(0.1)%	(0.9)%

Property Catastrophe Excess

(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**	**Total IBNR liabilities plus expected development on reported claims**	**Cumulative number of reported claims**
2009	48.2	49.0	47.7	46.7	45.9	45.1	44.8	44.9	44.9	44.9	(0.1)	NA
2010		136.1	133.6	131.0	130.2	122.8	121.9	121.4	120.7	121.3	(0.2)	NA
2011			148.6	153.2	142.7	121.0	117.4	116.6	116.6	116.6	0.1	NA
2012				70.8	59.2	52.6	50.6	51.1	46.3	46.5	0.5	NA
2013					71.6	78.2	75.3	74.7	73.9	73.6	0.0	NA
2014						56.2	57.7	54.9	54.9	54.8	0.3	NA
2015							27.6	29.6	27.2	26.2	0.0	NA
2016								50.6	48.2	42.8	1.8	NA
2017									106.3	124.4	20.3	NA
2018										157.3	60.6	NA
									Total	**808.4**		

Property Catastrophe Excess

(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**
2009	7.4	31.4	39.8	42.7	43.7	44.0	44.1	44.2	44.2	44.2
2010		49.8	90.0	102.5	107.6	111.1	113.6	117.5	117.5	118.0
2011			15.7	54.1	95.6	114.7	115.0	115.4	116.4	116.5
2012				2.8	26.2	35.8	40.5	41.5	43.3	44.5
2013					11.1	49.4	62.1	67.1	68.4	69.6
2014						9.4	36.1	42.3	47.9	49.5
2015							1.8	9.5	16.9	20.2
2016								10.4	25.7	31.9
2017									13.3	67.9
2018										2.8
									Total	**565.1**
	All outstanding liabilities before 2009, net of reinsurance									2.4
	Liabilities for loss and allocated loss adjustment expenses, net of reinsurance									**245.7**

Property Catastrophe Excess

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	15.4%	41.3%	19.8%	9.4%	1.9%	1.6%	1.9%	0.1%	0.3%	0.0%

Agriculture
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	11.9	10.0	8.7	8.7	8.5	8.6	8.6	8.6	8.6	8.6	-	NA
2010		12.8	10.8	10.9	10.7	10.7	10.7	10.7	10.7	10.7	(0.3)	NA
2011			21.5	21.6	21.7	21.7	21.7	21.7	21.7	21.7	-	NA
2012				41.0	45.8	45.8	45.7	46.9	46.9	46.9	(0.3)	NA
2013					9.1	10.8	12.9	13.0	12.8	12.8	(0.1)	NA
2014						9.6	8.1	8.4	8.8	8.8	0.2	NA
2015							7.0	9.2	9.5	9.5	-	NA
2016								33.5	30.8	29.9	0.2	NA
2017									50.5	47.0	2.5	NA
2018										39.4	33.8	NA
									Total	**235.3**		

Agriculture
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	2.2	9.0	8.6	8.6	8.4	8.4	8.4	8.4	8.4	8.4
2010		0.5	10.7	10.8	10.6	10.6	10.7	10.7	10.7	10.7
2011			1.0	21.3	21.6	21.6	21.6	21.6	21.6	21.6
2012				19.0	45.4	45.7	45.6	46.9	46.9	46.9
2013					7.1	10.6	12.8	13.0	12.8	12.8
2014						6.5	8.1	8.8	8.8	8.9
2015							1.5	7.8	9.0	9.3
2016								10.1	28.1	29.6
2017									9.2	43.7
2018										2.6
									Total	**194.5**
									All outstanding liabilities before 2009, net of reinsurance	0.1
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**40.9**

Agriculture

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	25.4%	65.2%	3.8%	0.3%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%

Global Accident & Health

(Millions)

Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	December 31, 2018: Total IBNR liabilities plus expected development on reported claims	December 31, 2018: Cumulative number of reported claims
	Incurred losses and allocated loss adjustment expenses, net of reinsurance — Year ended December 31,											
2009	86.6	84.3	81.3	79.2	78.9	79.0	78.9	79.0	79.0	79.0	-	NA
2010		118.4	125.4	122.9	122.1	121.8	121.8	121.8	121.7	121.6	(0.1)	NA
2011			161.3	176.7	172.3	171.7	171.7	171.6	171.5	171.4	0.1	NA
2012				163.4	160.1	147.8	147.1	146.8	146.7	146.6	(0.1)	NA
2013					125.6	123.2	118.7	118.2	117.6	116.8	-	NA
2014						131.1	132.2	130.6	130.6	129.6	0.2	NA
2015							153.5	149.5	146.1	144.8	0.7	NA
2016								176.7	190.9	186.7	5.0	NA
2017									176.4	168.3	13.2	NA
2018										202.8	52.3	NA
									Total	**1,467.6**		

Global Accident & Health

(Millions)

Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance — Year ended December 31,									
2009	27.7	67.7	76.1	77.7	78.5	78.6	78.7	78.8	78.8	78.8
2010		53.1	102.2	119.2	121.4	121.7	121.8	121.9	121.9	121.9
2011			71.2	139.2	166.1	171.1	171.5	171.6	171.6	171.6
2012				72.1	136.0	146.0	146.4	146.6	146.6	146.6
2013					54.4	103.6	114.1	115.5	116.7	116.2
2014						59.3	111.3	124.8	126.6	126.6
2015							75.7	130.3	141.8	143.4
2016								97.7	131.9	143.7
2017									95.7	146.0
2018										128.1
									Total	**1,322.9**
									All outstanding liabilities before 2009, net of reinsurance	3.5
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**148.2**

Global Accident & Health

Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance										
Years	1	2	3	4	5	6	7	8	9	10
	50.1%	36.5%	10.0%	1.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%

Sirius International Group, Ltd.
Notes to Consolidated Financial Statements
For the years ended December 31, 2018, 2017, and 2016

Aviation & Space

(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	30.9	34.0	35.0	36.9	35.3	35.1	34.2	31.9	31.9	35.8	0.2	NA
2010		42.5	47.5	47.2	44.7	43.2	42.3	42.1	41.6	41.9	(0.5)	NA
2011			46.9	42.3	37.9	35.9	34.7	34.5	35.8	35.1	(0.2)	NA
2012				35.6	34.3	30.2	28.2	28.4	29.5	29.6	(0.2)	NA
2013					40.6	36.4	33.4	32.0	32.9	33.0	(0.1)	NA
2014						35.7	38.2	35.0	34.2	34.3	-	NA
2015							39.5	35.9	40.0	39.0	0.1	NA
2016								32.1	32.6	33.6	1.3	NA
2017									34.0	43.0	5.9	NA
2018										48.0	19.8	NA
									Total	**373.3**		

Aviation & Space

(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	7.9	16.6	21.4	26.4	27.6	28.5	31.7	31.2	32.0	35.9
2010		12.0	22.1	31.5	36.2	37.8	38.8	39.7	39.9	41.0
2011			10.2	22.7	28.6	31.5	32.7	34.1	34.8	34.7
2012				7.6	18.4	22.6	24.6	27.3	28.2	28.7
2013					13.5	19.9	24.0	26.7	28.5	29.2
2014						8.0	17.9	23.6	26.2	28.2
2015							10.5	21.1	27.1	33.5
2016								7.8	19.7	26.9
2017									9.0	23.7
2018										14.3
									Total	**296.1**
									All outstanding liabilities before 2009, net of reinsurance	9.4
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**86.6**

Aviation & Space

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	27.0%	29.4%	16.8%	10.5%	5.0%	2.8%	3.7%	(0.4)%	2.4%	10.9%

Trade credit
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	9.4	10.0	9.8	9.7	9.4	9.4	9.3	9.3	9.4	10.1	(0.1)	NA
2010		14.1	12.3	9.6	9.7	9.8	9.7	9.6	9.8	9.8	(0.3)	NA
2011			29.2	29.0	27.4	27.1	27.1	26.5	26.5	26.3	(0.2)	NA
2012				34.5	34.3	32.5	32.8	32.4	32.4	32.0	(0.3)	NA
2013					29.5	28.4	27.5	27.3	27.9	27.4	0.2	NA
2014						22.8	22.7	23.5	21.4	21.1	0.3	NA
2015							20.2	19.7	19.2	18.4	-	NA
2016								15.3	13.2	12.5	0.6	NA
2017									19.2	20.1	6.2	NA
2018										25.0	13.3	NA
									Total	**202.7**		

Trade credit
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	3.4	7.7	8.5	8.8	8.9	9.0	9.1	9.1	9.1	10.0
2010		1.8	5.2	7.7	8.6	9.0	9.1	9.3	9.4	9.5
2011			6.5	17.5	23.5	24.8	25.7	26.0	25.7	25.8
2012				14.7	26.8	31.0	31.8	32.1	31.9	31.9
2013					11.6	19.8	22.8	24.0	24.4	24.5
2014						7.8	13.7	17.7	19.2	19.7
2015							4.5	12.2	15.7	16.6
2016								4.6	8.9	10.6
2017									3.0	8.8
2018										7.7
									Total	**165.1**
									All outstanding liabilities before 2009, net of reinsurance	4.5
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**42.1**

Trade credit

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	32.3%	35.3%	16.4%	4.6%	2.1%	0.4%	0.0%	0.3%	1.0%	8.2%

Environmental
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	-	-	-	-	-	-	-	-	-	-	-	NA
2010		-	-	-	-	-	-	-	-	-	-	NA
2011			-	-	-	-	-	-	-	-	-	NA
2012				-	-	-	-	-	-	-	-	NA
2013					-	-	-	-	-	-	-	NA
2014						-	-	-	-	-	-	NA
2015							-	-	-	-	-	NA
2016								-	-	-	-	NA
2017									-	-	-	NA
2018										0.4	0.4	NA
									Total	**0.4**		

Environmental
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	-	-	-	-	-	-	-	-	-	-
2010		-	-	-	-	-	-	-	-	-
2011			-	-	-	-	-	-	-	-
2012				-	-	-	-	-	-	-
2013					-	-	-	-	-	-
2014						-	-	-	-	-
2015							-	-	-	-
2016								-	-	-
2017									-	-
2018										-
									Total	**-**
									All outstanding liabilities before 2009, net of reinsurance	-
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**0.4**

Environmental

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Marine
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	27.9	25.8	24.8	24.4	24.0	24.1	24.2	23.8	24.1	24.0	(0.1)	NA
2010		32.3	35.1	32.7	32.4	33.3	32.9	31.6	31.3	31.1	-	NA
2011			36.6	32.8	30.6	31.1	32.1	31.5	31.6	31.5	(0.3)	NA
2012				27.3	33.4	36.1	37.5	37.9	36.8	36.3	1.2	NA
2013					23.3	20.5	19.3	18.3	18.1	18.0	-	NA
2014						23.3	21.6	19.5	18.2	17.9	-	NA
2015							29.5	31.5	29.2	28.8	0.1	NA
2016								28.3	29.2	28.4	1.1	NA
2017									37.5	35.1	6.3	NA
2018										23.3	9.3	NA
									Total	**274.4**		

Marine
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	3.6	12.5	17.5	19.8	21.7	22.6	22.8	23.0	23.1	23.2
2010		5.0	12.2	17.1	19.5	21.3	26.7	27.5	28.5	28.7
2011			4.3	14.3	21.6	25.1	27.9	28.7	29.1	29.6
2012				5.2	14.7	24.2	27.1	29.1	31.0	32.6
2013					2.8	9.3	12.6	14.0	14.4	14.9
2014						4.1	10.3	13.7	15.0	15.8
2015							4.3	11.8	21.8	26.2
2016								6.8	17.5	21.4
2017									7.2	18.2
2018										5.3
									Total	**215.9**
									All outstanding liabilities before 2009, net of reinsurance	0.4
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**58.9**

Marine

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	17.8%	30.7%	22.0%	9.7%	6.1%	6.7%	2.4%	1.9%	0.6%	0.4%

Surety
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**	**Total IBNR liabilities plus expected development on reported claims**	**Cumulative number of reported claims**
2009	-	-	-	-	-	-	-	-	-	-	-	NA
2010		0.1	0.1	0.2	0.4	0.4	0.3	0.3	0.1	0.1	0.1	NA
2011			0.3	0.5	0.6	0.6	0.4	0.4	0.2	0.2	0.2	NA
2012				0.5	0.6	0.6	0.4	0.4	0.3	0.3	0.3	NA
2013					1.0	0.9	0.7	0.5	0.7	0.9	0.7	NA
2014						1.2	1.1	1.0	1.1	1.3	1.1	NA
2015							1.0	1.2	1.0	0.8	0.8	NA
2016								-	-	0.5	0.4	NA
2017									0.6	0.4	0.3	NA
2018										0.9	0.9	NA
									Total	**5.4**		

Surety
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**
2009	-	-	-	-	-	-	-	-	-	-
2010		-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2011			0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2012				0.1	0.1	0.1	0.2	0.2	0.2	0.2
2013					0.1	0.1	0.2	0.3	0.5	0.6
2014						-	0.2	0.4	0.7	0.9
2015							0.1	0.2	0.3	0.4
2016								-	-	0.3
2017									-	-
2018										-
									Total	**2.7**
									All outstanding liabilities before 2009, net of reinsurance	1.8
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**4.5**

Surety

Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance										
Years	1	2	3	4	5	6	7	8	9	10
	8.5%	9.4%	17.7%	15.2%	14.6%	11.6%	3.5%	0.9%	1.7%	0.0%

Contingency

(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**	**Total IBNR liabilities plus expected development on reported claims**	**Cumulative number of reported claims**
2009	6.9	6.4	6.3	6.2	6.2	6.2	6.3	6.3	6.4	6.3	-	NA
2010		5.6	6.0	4.5	4.4	4.3	4.1	4.1	4.1	4.2	-	NA
2011			7.8	7.1	6.6	6.5	6.5	6.6	6.6	6.6	0.1	NA
2012				9.5	8.5	8.6	8.4	8.2	8.0	8.0	-	NA
2013					5.4	4.2	3.6	3.5	3.5	3.5	0.1	NA
2014						4.2	7.0	5.2	4.7	4.7	-	NA
2015							10.0	9.7	9.0	8.9	0.1	NA
2016								18.0	18.4	17.4	0.3	NA
2017									9.8	10.7	1.2	NA
2018										9.5	4.2	NA
									Total	**79.8**		

Contingency

(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	**2009 Unaudited**	**2010 Unaudited**	**2011 Unaudited**	**2012 Unaudited**	**2013 Unaudited**	**2014 Unaudited**	**2015 Unaudited**	**2016 Unaudited**	**2017 Unaudited**	**2018**
2009	4.9	5.9	6.1	6.1	6.1	6.2	6.2	6.2	6.3	6.4
2010		1.9	3.4	3.5	3.5	3.9	4.1	4.1	4.1	4.1
2011			2.1	5.7	6.4	6.4	6.4	6.5	6.5	6.5
2012				5.2	7.1	8.4	8.4	8.2	8.0	8.0
2013					1.8	3.0	3.2	3.3	3.3	3.3
2014						1.6	3.7	4.4	4.5	4.5
2015							2.8	7.2	7.8	7.8
2016								12.1	15.6	16.4
2017									3.0	7.1
2018										1.9
									Total	**66.0**
									All outstanding liabilities before 2009, net of reinsurance	(0.1)
									Liabilities for loss and allocated loss adjustment expenses, net of reinsurance	**13.7**

Contingency

Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance										
Years	1	2	3	4	5	6	7	8	9	10
	46.7%	33.0%	8.0%	0.4%	0.8%	0.0%	0.4%	0.5%	1.3%	0.6%

Sirius International Group, Ltd.
Notes to Consolidated Financial Statements
For the years ended December 31, 2018, 2017, and 2016

Casualty
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance										December 31, 2018	
	Year ended December 31,											
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.2	-	NA
2010		1.7	1.5	1.6	1.4	1.1	0.9	0.6	0.6	0.5	-	NA
2011			0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	-	NA
2012				0.2	0.2	0.4	0.5	0.5	0.5	0.5	0.1	NA
2013					0.4	0.4	0.4	0.4	0.5	0.5	-	NA
2014						0.4	0.4	0.5	0.5	0.5	-	NA
2015							0.5	0.8	0.6	0.5	-	NA
2016								0.2	0.3	0.3	0.1	NA
2017									9.7	9.7	6.8	NA
2018										53.4	44.6	NA
									Total	**66.3**		

Casualty
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
2010		-	-	0.1	0.1	0.2	0.4	0.3	0.4	0.4
2011			-	-	0.1	0.1	0.2	0.2	0.2	0.2
2012				-	-	0.1	0.2	0.1	0.2	0.2
2013					0.1	0.1	0.2	0.3	0.4	0.4
2014						0.1	0.2	0.4	0.4	0.4
2015							0.2	0.4	0.4	0.4
2016								-	0.1	0.1
2017									-	0.6
2018										2.0
									Total	**4.9**
	All outstanding liabilities before 2009, net of reinsurance									4.0
	Liabilities for loss and allocated loss adjustment expenses, net of reinsurance									**65.4**

Casualty

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	3.7%	9.7%	14.4%	10.8%	8.1%	11.9%	3.4%	3.4%	3.0%	2.8%

Runoff & Other
(Millions)

	Incurred losses and allocated loss adjustment expenses, net of reinsurance											
	Year ended December 31,										December 31, 2018	
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018	Total IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
2009	527.0	520.5	510.0	509.6	510.0	510.7	511.6	512.7	511.9	512.2	7.9	NA
2010		389.1`	390.4`	390.6	391.1	392.3	393.8	394.8	394.8	394.1	3.8	NA
2011			306.4	307.6	308.7	309.4	309.9	310.8	310.3	309.8	5.5	NA
2012				3.6	4.0	4.1	4.2	4.1	4.1	3.9	1.3	NA
2013					1.2	0.2	0.2	0.2	0.1	0.2	-	NA
2014						0.2	0.2	0.3	0.4	0.5	-	NA
2015							9.5	15.7	17.5	18.0	0.6	NA
2016								11.8	12.1	11.7	0.6	NA
2017									0.6	0.9	-	NA
2018										30.3	6.6	NA
									Total`	**1,281.6**		

Runoff & Other
(Millions)

	Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance									
	Year ended December 31,									
Accident Year	2009 Unaudited	2010 Unaudited	2011 Unaudited	2012 Unaudited	2013 Unaudited	2014 Unaudited	2015 Unaudited	2016 Unaudited	2017 Unaudited	2018
2009	289.1	402.5	480.3	483.8	488.3	492.1	495.1	496.5	498.9	499.6
2010		225.7	370.4	372.7	376.8	380.0	383.6	385.5	387.4	388.1
2011			291.8	293.8	296.1	297.8	299.5	301.6	303.1	303.6
2012				0.3	1.3	1.8	2.2	2.4	2.4	2.5
2013					0.7	0.1	0.1	0.1	0.1	0.1
2014						-	-	0.1	0.2	0.3
2015							5.2	10.0	15.3	16.6
2016								6.2	10.1	10.9
2017									0.4	0.5
2018										7.9
									Total	**1,230.1**
	All outstanding liabilities before 2009, net of reinsurance									422.2
	Liabilities for loss and allocated loss adjustment expenses, net of reinsurance									**473.7**

Runoff & Other

	Average annual percentage payout of incurred losses and allocated LAE by age, net of reinsurance									
Years	1	2	3	4	5	6	7	8	9	10
	64.5%	21.5%	7.1%	0.9%	0.8%	0.8%	0.5%	0.3%	0.3%	0.1%

Note 6. Third party reinsurance

In the normal course of business, Sirius Group seeks to protect its businesses from losses due to concentration of risk and losses arising from catastrophic events by reinsuring with third-party reinsurers. Sirius Group remains liable for risks reinsured in the event that the reinsurer does not honor its obligations under reinsurance contracts. The effects of reinsurance on Sirius Group's written and earned premiums and on losses and LAE were as follows:

(Millions)	2018	2017	2016
Written premiums:			
Direct	$ 454.5	$ 450.2	$ 368.5
Assumed	1,366.5	989.1	900.5
Gross written premiums	1,821.0	1,439.3	1,269.0
Ceded	(463.9)	(349.1)	(330.9)
Net written premiums	**$ 1,357.1**	**$ 1,090.2**	**$ 938.1**
Earned premiums:			
Direct	$ 432.6	$ 405.7	$ 351.6
Assumed	1,236.2	942.2	877.7
Gross earned premiums	1,668.8	1,347.9	1,229.3
Ceded	(406.5)	(312.6)	(339.2)
Net earned premiums	**$ 1,262.3**	**$ 1,035.3**	**$ 890.1**
Losses and LAE:			
Direct	$ 260.5	$ 294.9	$ 216.9
Assumed	819.1	701.3	463.8
Gross losses and LAE	1,079.6	996.2	680.7
Ceded	(179.6)	(185.0)	(161.4)
Net losses and LAE	**$ 900.0**	**$ 811.2**	**$ 519.3**

Sirius Group's reinsurance protection primarily consists of pro-rata and excess of loss protections that protect all of its reportable segments. Attachment points and coverage limits vary by region around the world.

Sirius Group's core proportional property reinsurance programs provide protection for parts of the non proportional treaty accounts written in Europe, the Americas, Caribbean, Asia, the Middle East and Australia. These reinsurance protections are designed to increase underwriting capacity where appropriate, and to reduce exposure both to large catastrophe losses and to a frequency of smaller loss events.

Sirius Group has in place excess of loss retrocessional coverage for its worldwide earthquake related exposures. This coverage was renewed for one year at May 1, 2018, providing $40.0 million of reinsurance protection in excess of Sirius Group's retention of $35.0 million and a further $35.0 million of coverage in excess of $75.0 million.

Sirius Group periodically purchases industry loss warranties ("ILW") contracts to augment its overall retrocessional program. The following ILW contracts are currently in force:

Scope	Limit	Trigger	Expiration Date
United States excluding North East, all natural perils	$5.0 million	$40.0 billion	July 5, 2019
Europe, wind	$5.0 million	$7.5 billion	April 30, 2019

Sirius Group purchases excess of loss reinsurance protection for its facultative and primary insurance property books. The protection was renewed at January 1, 2019 for business written in Stockholm, Hamburg and Singapore, providing $32.5 million of protection in excess of $2.5 million. For the business written by Syndicate 1945, an excess of loss reinsurance protection of $10.0 million in excess of retention of $5.0 million on a per risk basis was placed for 12 months at June 30, 2018. Due to reduced exposures, this was cancelled December 31, 2018 and not replaced. For catastrophe losses from business written by Syndicate 1945, Sirius Group has 50% of a $12.0 million protection in excess of retention of $3.0 million placed for 12 months at January 1, 2019.

Almost all of Sirius Group's excess of loss reinsurance protections, excluding ILWs which tend to only cover one loss event, include provisions that reinstate coverage at a cost of 100% or more of the original reinsurance premium.

In connection with the CMIG International acquisition, White Mountains required Sirius Group to purchase ILWs, referred to as the WTM Covers, to mitigate the potential impact of major natural catastrophe events on Sirius Group's balance sheet pending the close of the sale to CMIG International. The cost and potential economic benefit provided by the WTM Covers inure to White Mountains. All but one of these contracts expired in May or June 2016; the other was a United States second event cover for an industry loss at $15 billion with a limit of $5 million that expired on July 15, 2016. Under the Stock Purchase Agreement ("SPA") between CMIG International and White Mountains, shortly after the sale of the Company, White Mountains paid the Company $16.5 million on an after-tax basis, which the Company recorded as paid-in surplus. The costs of these programs are part of the Runoff & Other reportable segment.

The following table summarizes the WTM Covers purchased in connection with the CMIG International acquisition that expired in 2016:

Scope	Limit	Industry Loss Trigger
United States first event	$75.0 million	$40.0 billion
United States first event	$22.5 million	$50.0 billion
United States second event	$45.0 million	$15.0 billion
Japan first event	$25.0 million	$12.5 billion

At December 31, 2018, Sirius Group had reinsurance recoverables on paid losses of $55.0 million and reinsurance recoverables of $350.2 million on unpaid losses. At December 31, 2017, Sirius Group had reinsurance recoverables on paid losses of $17.5 million and reinsurance recoverables of $319.7 million on paid unpaid losses. Because retrocessional reinsurance contracts do not relieve Sirius Group of its obligation to its insureds, the collectability of balances due from Sirius Group's reinsurers is important to its financial strength. Sirius Group monitors the financial strength and ratings of retrocessionaires on an ongoing basis. Uncollectible amounts historically have not been significant.

The following tables provide a listing of Sirius Group's gross and net recoverable amounts by the reinsurer's Standard & Poor's Financial Services LLC ("Standard & Poor's") rating and the percentage of total recoverables as of December 31, 2018 and 2017. With certain reinsurers if Standard & Poor's rating was not available, an A.M. Best rating was used.

	December 31, 2018			
Rating[1]	**Gross**	**Collateral**	**Net**	**% of Net Total**
AA	$ 115.1	$ 1.5	$ 113.6	35%
A	212.9	45.4	167.5	52%
BBB+	-	-	-	0%
BBB or lower	19.5	13.3	6.2	2%
Not rated	57.7	23.2	34.5	11%
Total	**$ 405.2**	**$ 83.4**	**$ 321.8**	**100%**

[1]*Standard & Poor's ratings as detailed above are: "AA" (Very strong), "A" (Strong), and "BBB+" and "BBB" (Adequate).*

	December 31, 2017			
Rating[1]	**Gross**	**Collateral**	**Net**	**% of Net Total**
AA	$ 116.9	$ 1.0	$ 115.9	43%
A	153.9	27.9	126.0	46%
BBB+	-	-	-	0%
BBB or lower	13.4	12.5	0.9	1%
Not rated	53.0	23.9	29.1	10%
Total	**$ 337.2**	**$ 65.3**	**$ 271.9**	**100%**

[1]*Standard & Poor's ratings as detailed above are: "AA" (Very strong), "A" (Strong), and "BBB+" and "BBB" (Adequate).*

The following tables provide a listing of the five highest gross recoverable amounts by reinsurer, along with percentage of total recoverable amount, the reinsurer's Standard & Poor's reinsurer rating, and the percentage that the recoverable is collateralized as of December 31, 2018 and 2017:

	December 31, 2018			
(Millions)	**Balance**	**% of Total**	**S&P rating**	**% Collateralized**
Reinsurer:				
General Insurance Corporation of India[(1)]	$ 82.7	20%	A-	97%
Swiss Reinsurance Company Ltd.	44.1	11%	AA-	0%
Berkshire Hathaway, Inc.	39.3	10%	AA+	1%
Argo Capital Group Ltd.	16.7	4%	A-	87%
Lloyd's of London	13.4	3%	A+	5%

[(1)] *Reflects an A.M. Best rating of "A-" (Excellent).*

	December 31, 2017			
(Millions)	**Balance**	**% of Total**	**S&P rating**	**% Collateralized**
Reinsurer:				
Swiss Reinsurance Company Ltd.	$ 45.5	13%	AA-	0%
Berkshire Hathaway, Inc.	41.1	12%	AA+	0%
Lloyd's of London	19.4	6%	A+	16%
Argo Capital Group Ltd.	18.2	5%	A-	78%
General Insurance Corporation of India[(1)]	17.3	5%	A-	11%

[(1)] *Reflects an A.M. Best rating of "A-" (Excellent).*

Note 7. Deferred acquisition costs

The following table presents a rollforward of Deferred acquisition costs for the years ended December 31, 2018, 2017, and 2016:

(Millions)	**2018**	**2017**	**2016**
Deferred acquisition costs - balance, beginning of the year	**$ 120.9**	**$ 84.7**	**$ 74.6**
Acquisition costs deferred[(1)]	202.6	220.7	137.7
Amortization expense	(180.4)	(186.7)	(126.7)
Other, including foreign exchange	(1.5)	2.2	(0.9)
Deferred acquisition costs – balance, end of the year	**$ 141.6**	**$ 120.9**	**$ 84.7**

[(1)] *2017 amount includes $2.9 from Acquisition of IMG. (See **Note 3**.)*

Note 8. Investment securities

Net Investment Income

Sirius Group's net investment income is comprised primarily of interest income along with associated amortization of premium and accretion of discount on Sirius Group's fixed maturity investments, dividend income from its equity investments, and interest income from its short-term investments.

Net investment income for the years ended December 31, 2018, 2017, and 2016 consisted of the following:

(Millions)	**2018**	**2017**	**2016**
Fixed maturity investments	$ 52.7	$ 51.3	$ 57.9
Short-term investments	5.0	1.5	0.9
Equity securities	16.5	5.0	4.1
Other long-term investments	8.4	8.5	4.9
Interest on funds held under reinsurance treaties	(0.5)	-	(0.5)
Total investment income	**82.1**	**66.3**	**67.3**
Investment expenses	(11.2)	(9.8)	(10.9)
Net investment income	**$ 70.9**	**$ 56.5**	**$ 56.4**

Net Realized and Unrealized Investment (Losses) Gains

Net realized and unrealized investment gains (losses) for the years ended December 31, 2018, 2017, and 2016 consisted of the following:

(Millions)	**2018**	**2017**	**2016**
Gross realized gains	$ 42.3	$ 23.8	$ 310.5
Gross realized (losses)	(40.0)	(51.2)	(22.4)
Net realized gains (losses) on investments[(1)(2)]	**2.3**	**(27.4)**	**288.1**
Net unrealized (losses) on investments[(3)]	(23.1)	(23.3)	(238.2)
Net realized and unrealized investment (losses) gains on investments	**$ (20.8)**	**$ (50.7)**	**$ 49.9**

[(1)]*Includes 17.3, $(19.2), and $50.0 of realized gains (losses) due to foreign currency during 2018, 2017, and 2016, respectively.*
[(2)]*Includes net realized gains of $222.5 related to Symetra in 2016. (See **Note 3**.)*
[(3)]*Includes $35.7, $(52.9), and $(7.7) of unrealized gains (losses) due to foreign currency during 2018, 2017, and 2016, respectively.*

Net realized investment gains (losses)
Net realized investment gains (losses) for the years ended December 31, 2018, 2017, and 2016 consisted of the following:

(Millions)	**2018**	**2017**	**2016**
Fixed maturity investments	$ 3.6	$ (19.0)	$ 57.4
Equity securities	(6.4)	0.1	231.7
Other long-term investments	5.1	(8.5)	(1.0)
Net realized investment gains (losses)	**$ 2.3**	**$ (27.4)**	**$ 288.1**

Net unrealized investment (losses)
The following table summarizes the net unrealized investment (losses) and changes in fair value for the years ended December 31, 2018, 2017, and 2016:

(Millions)	**2018**	**2017**	**2016**
Fixed maturity investments	$ 14.1	$ (41.2)	$ (25.0)
Equity securities	(51.0)	12.3	(214.5)
Other long-term investments	13.8	5.6	1.3
Net unrealized investment (losses)	**$ (23.1)**	**$ (23.3)**	**$ (238.2)**

The following table summarizes the amount of total gains (losses) included in earnings attributable to unrealized investment gains (losses) for Level 3 investments for the years ended December 31, 2018, 2017, and 2016:

(Millions)	**2018**	**2017**	**2016**
Fixed maturity investments	$ (6.1)	$ (0.2)	$ (0.1)
Equity securities	-	0.1	-
Other long-term investments	4.0	(0.6)	1.2
Total unrealized investment (losses) gains - Level 3 investments	**$ (2.1)**	**$ (0.7)**	**$ 1.1**

Investment Holdings

Fixed maturity investments

The cost or amortized cost, gross unrealized investment gains (losses), net foreign currency gains (losses), and fair value of Sirius Group's fixed maturity investments as of December 31, 2018 and 2017, were as follows:

	2018				
(Millions)	**Cost or amortized cost**	**Gross unrealized gains**	**Gross unrealized losses**	**Net foreign currency gains (losses)**	**Fair value**
Mortgage-backed and asset-backed securities	$ 1,024.0	$ 2.0	$ (13.5)	$ 8.6	$ 1,021.1
Corporate debt securities	694.1	1.4	(7.3)	7.6	695.8
U.S. government and government agency	163.9	0.3	(0.5)	4.2	167.9
Non-U.S. government and government agency	50.6	-	(0.2)	(0.1)	50.3
Preferred stocks	14.5	0.6	(6.8)	0.2	8.5
U.S. States, municipalities and political subdivision	2.8	-	-	-	2.8
Total fixed maturity investments	**$ 1,949.9**	**$ 4.3**	**$ (28.3)**	**$ 20.5**	**$ 1,946.4**

	2017				
(Millions)	**Cost or amortized cost**	**Gross unrealized gains**	**Gross unrealized losses**	**Net foreign currency gains (losses)**	**Fair value**
Mortgage-backed and asset-backed securities	$ 968.8	$ 1.2	$ (9.7)	$ (4.2)	$ 956.0
Corporate debt securities	1,017.0	3.1	(4.8)	(0.8)	1,014.5
U.S. government and government agency	85.8	-	(0.8)	(0.2)	84.8
Non-U.S. government and government agency	106.8	0.1	(0.9)	1.2	107.2
Preferred stocks	9.3	0.3	-	0.2	9.8
U.S. States, municipalities and political subdivision	3.8	-	-	-	3.8
Total fixed maturity investments	**$ 2,191.4**	**$ 4.7**	**$ (16.2)**	**$ (3.8)**	**$ 2,176.1**

The weighted average duration of Sirius Group's fixed income portfolio as of December 31, 2018 was approximately 1.7 years, including short-term investments, and approximately 2.2 years excluding short-term investments.

The cost or amortized cost and fair value of Sirius Group's fixed maturity investments as of December 31, 2018 and 2017 are presented below by contractual maturity. Actual maturities could differ from contractual maturities because borrowers may have the right to call or prepay certain obligations with or without call or prepayment penalties.

	2018		2017	
(Millions)	**Cost or amortized cost**	**Fair value**	**Cost or amortized cost**	**Fair value**
Due in one year or less	$ 249.6	$ 254.6	$ 106.3	$ 106.5
Due after one year through five years	635.6	636.4	1,009.0	1,006.4
Due after five years through ten years	26.1	25.7	71.2	70.8
Due after ten years	0.1	0.1	26.9	26.6
Mortgage-backed and asset-backed securities	1,024.0	1,021.1	968.8	956.1
Preferred stocks	14.5	8.5	9.2	9.7
Total	**$ 1,949.9**	**$ 1,946.4**	**$ 2,191.4**	**$ 2,176.1**

The following table summarizes the ratings and fair value of fixed maturity investments held in Sirius Group's investment portfolio as of December 31, 2018 and 2017:

(Millions)	**2018**	**2017**
AAA	$ 602.0	$ 689.4
AA	815.2	631.3
A	290.0	416.4
BBB	168.2	333.8
Other	71.0	105.2
Total fixed maturity investments[1]	**$ 1,946.4**	**$ 2,176.1**

[1] *Credit ratings are assigned based on the following hierarchy: 1) Standard & Poor's and 2) Moody's Investor Service.*

At December 31, 2018, the above totals included $42.6 million of sub-prime securities. Of this total, $17.1 million was rated AAA, $9.8 million rated AA, $6.0 million rated A, $4.7 million rated BBB and $5.0 million classified as other. At December 31, 2017, the above included $93.0 million of sub-prime securities. Of this total, $53.0 million was rated AAA, $25.7 million rated AA, $1.3 million rated A, $8.4 million rated BBB and $4.6 million classified as other.

Equity securities and Other long-term investments

The cost or amortized cost, gross unrealized investment gains and losses, net foreign currency gains and losses, and fair values of Sirius Group's equity securities and other long-term investments as of December 31, 2018 and 2017, were as follows:

	2018				
(Millions)	**Cost or amortized cost**	**Gross unrealized gains**	**Gross unrealized losses**	**Net foreign currency gains (losses)**	**Fair value**
Equity securities	$ 409.4	$ 17.8	$ (50.8)	$ 3.6	$ 380.0
Other long-term investments	$ 337.6	$ 32.6	$ (13.5)	$ 8.3	$ 365.0

	2017				
(Millions)	**Cost or amortized cost**	**Gross unrealized gains**	**Gross unrealized losses**	**Net foreign currency gains (losses)**	**Fair value**
Equity securities	$ 275.1	$ 29.3	$ (5.1)	$ (0.1)	$ 299.2
Other long-term investments	$ 255.5	$ 14.2	$ (4.1)	$ 3.9	$ 269.5

Other long-term investments at fair value consist of the following as of December 31, 2018 and 2017:

(Millions)	**2018**	**2017**
Hedge funds and private equity funds	$ 301.4	$ 205.3
Limited liability companies and private equity securities	63.6	64.2
Total other long-term investments	**$ 365.0**	**$ 269.5**

Hedge Funds and Private Equity Funds

Sirius Group holds investments in hedge funds and private equity funds, which are included in other long-term investments. The fair value of these investments has been estimated using the net asset value of the funds. As of December 31, 2018, Sirius Group held investments in 9 hedge funds and 27 private equity funds. The largest investment in a single fund was $54.8 million as of December 31, 2018 and $31.4 million as of December 31, 2017.

The following table summarizes investments in hedge funds and private equity interests by investment objective and sector as of December 31, 2018 and 2017:

	2018		2017	
(Millions)	**Fair value**	**Unfunded commitments**	**Fair value**	**Unfunded commitments**
Hedge funds:				
Long/short multi-sector	$ 41.0	$ -	$ 31.5	$ -
Distressed mortgage credit	54.8	-	25.5	-
Private credit	20.0	-	-	-
Other	2.5	-	3.2	-
Total hedge funds	**118.3**	-	**60.2**	-
Private equity funds:				
Energy infrastructure & services	93.7	54.2	73.5	56.4
Multi-sector	9.0	0.7	9.5	1.0
Healthcare	31.7	15.6	23.4	28.6
Life settlement	23.7	-	21.5	-
Manufacturing/Industrial	23.6	10.4	15.9	5.1
Private equity secondaries	1.1	1.1	1.1	1.0
Real estate	0.3	-	0.2	-
Total private equity funds	**183.1**	**82.0**	**145.1**	**92.1**
Total hedge and private equity funds included in other long-term investments	**$ 301.4**	**$ 82.0**	**$ 205.3**	**$ 92.1**

Redemption of investments in certain hedge funds is subject to restrictions including lock-up periods where no redemptions or withdrawals are allowed, restrictions on redemption frequency, and advance notice periods for redemptions. Amounts requested for redemptions remain subject to market fluctuations until the redemption effective date, which generally falls at the end of the defined redemption period.

The following summarizes the December 31, 2018 fair value of hedge funds subject to restrictions on redemption frequency and advance notice period requirements for investments in active hedge funds:

	Notice Period				
Redemption Frequency *(Millions)*	**30-59 days notice**	**60-89 days notice**	**90-119 days notice**	**120+ days notice**	**Total**
Monthly	$ -	$ 25.4	$ -	$ -	$ 25.4
Quarterly	0.8	-	-	-	0.8
Semi-annual	-	0.8	-	-	0.8
Annual	-	15.6	55.7	20.0	91.3
Total	**$ 0.8**	**$ 41.8**	**$ 55.7**	**$ 20.0**	**$ 118.3**

Certain of the hedge fund and private equity fund investments in which Sirius Group is invested are no longer active and are in the process of disposing of their underlying investments. Distributions from such funds are remitted to investors as the fund's underlying investments are liquidated. As of December 31, 2018, no distributions were outstanding from these investments.

Investments in private equity funds are generally subject to a "lock-up" period during which investors may not request a redemption. Distributions prior to the expected termination date of the fund may be limited to dividends or proceeds arising from the liquidation of the fund's underlying investments. In addition, certain private equity funds provide an option to extend the lock-up period at either the sole discretion of the fund manager or upon agreement between the fund and the investors.

As of December 31, 2018, investments in private equity funds were subject to lock-up periods as follows:

(Millions)	**1 - 3 years**	**3 – 5 years**	**5 – 10 years**	**Total**
Private Equity Funds – expected lock up period remaining	$ 17.2	$ 4.6	$ 161.3	$ 183.1

Investments Held on Deposit or as Collateral

As of December 31, 2018 and 2017, investments of $792.4 million and $548.2 million, respectively, were held in trusts required to be maintained in relation to various reinsurance agreements. Sirius Group's consolidated reinsurance operations are required to maintain deposits with certain insurance regulatory agencies in order to maintain their insurance licenses. The fair value of such deposits which are included within total investments totaled $801.2 million and $548.4 million as of December 31, 2018 and 2017, respectively.

As of December 31, 2018, Sirius Group held $0.3 million of collateral in the form short-term investments associated with Interest Rate Cap agreements. (See **Note 13**.)

Unsettled investment purchases and sales

As of December 31, 2018 and 2017, Sirius Group reported $3.2 million and $0.3 million, respectively, in Accounts payable on unsettled investment purchases.

As of December 31, 2018 and 2017, Sirius Group reported $5.0 million and $0.3 million, respectively, in Accounts receivable on unsettled investment sales.

Note 9. Fair value measurements

Fair value measurements
Fair value measurements are categorized into a hierarchy that distinguishes between inputs based on market data from independent sources ("observable inputs") and a reporting entity's internal assumptions based upon the best information available when external market data is limited or unavailable ("unobservable inputs"). Quoted prices in active markets for identical assets or liabilities have the highest priority ("Level 1"), followed by observable inputs other than quoted prices, including prices for similar but not identical assets or liabilities ("Level 2"), and unobservable inputs, including the reporting entity's estimates of the assumptions that market participants would use, having the lowest priority ("Level 3").

The availability of observable inputs can vary from financial instrument to financial instrument and is affected by a wide variety 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 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. In periods of market dislocation, the observability of prices and inputs may be reduced for many instruments. This may lead the Company to change the selection of the valuation technique (for example, from market to cash flow approach) or to use multiple valuation techniques to estimate the fair value of a financial instrument. These circumstances could cause an instrument to be reclassified between levels within fair value hierarchy. Investments valued using Level 1 inputs include fixed maturity investments, primarily investments in U.S. Treasuries Bills and Notes, equity securities, and short-term investments. Investments valued using Level 2 inputs are primarily comprised of fixed maturity investments, which have been disaggregated into classes, including U.S. government and government agency, corporate debt securities, mortgage-backed and asset-backed securities, non-U.S. government and government agency, U.S. state and municipalities and political sub division and preferred stocks. Investments valued using Level 2 inputs also include certain ETFs that track U.S. stock indices such as the S&P 500 but are traded on foreign exchanges. Fair value estimates for investments that trade infrequently and have few or no observable market prices are classified as Level 3 measurements. Sirius Group determines when transfers between levels have occurred as of the beginning of the period.

Valuation techniques

Sirius Group uses outside pricing services to assist in determining fair values for its investments. For investments in active markets, Sirius Group uses the quoted market prices provided by outside pricing services to determine fair value. The outside pricing services Sirius Group uses have indicated that they will only provide prices where observable inputs are available. In circumstances where quoted market prices are unavailable or are not considered reasonable, Sirius Group estimates the fair value using industry standard pricing models and observable inputs such as benchmark yields, reported trades, broker-dealer quotes, issuer spreads, benchmark securities, bids, offers, prepayment speeds, reference data including research publications, and other relevant inputs. Given that many fixed maturity investments do not trade on a daily basis, the outside pricing services evaluate a wide range of fixed maturity investments by regularly drawing parallels from recent trades and quotes of comparable securities with similar features. The characteristics used to identify comparable fixed maturity investments vary by asset type and take into account market convention.

The valuation process above is generally applicable to all of Sirius Group's fixed maturity investments. The techniques and inputs specific to asset classes within Sirius Group's fixed maturity investments for Level 2 securities that use observable inputs are as follows:

U.S. government and government agency
U.S. government and government agency securities consist primarily of debt securities issued by the U.S. Treasury and mortgage pass-through agencies such as the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Government National Mortgage Association. Fixed maturity investments included in U.S. government and government agency securities are primarily priced by pricing services. When evaluating these securities, the pricing services gather information from market sources and integrate other observations from markets and sector news. Evaluations are updated by obtaining broker dealer quotes and other market information including actual trade volumes, when available. The fair value of each security is individually computed using analytical models which incorporate option adjusted spreads and other daily interest rate data.

Non-U.S. government and government agency
Non-U.S. government and government agency securities consist of debt securities issued by non-U.S. governments and their agencies along with supranational organizations (also known as sovereign debt securities). Securities held in these sectors are primarily priced by pricing services who employ proprietary discounted cash flow models to value the securities. Key quantitative inputs for these models are daily observed benchmark curves for treasury, swap, and high issuance credits. The pricing services then apply a credit spread for each security which is developed by in-depth and real time market analysis. For securities in which trade volume is low, the pricing services utilize data from more frequently traded securities with similar attributes. These models may also be supplemented by daily market and credit research for international markets.

Corporate debt securities
Corporate debt securities consist primarily of investment-grade debt of a wide variety of U.S. and non-U.S. corporate issuers and industries. The corporate fixed maturity investments are primarily priced by pricing services. When evaluating these securities, the pricing services gather information from market sources regarding the issuer of the security and obtain credit data, as well as other observations, from markets and sector news. Evaluations are updated by obtaining broker dealer quotes and other market information including actual trade volumes, when available. The pricing services also consider the specific terms and conditions of the securities, including any specific features which may influence risk.

Mortgage-backed and asset-backed securities
The fair value of mortgage and asset-backed securities is primarily priced by pricing services using a pricing model that uses information from market sources and leveraging similar securities. Key inputs include benchmark yields, reported trades, underlying tranche cash flow data, collateral performance, plus new issue data, as well as broker-dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, and reference data including issuer, vintage, loan type, collateral attributes, prepayment speeds, default rates, recovery rates, cash flow stress testing, credit quality ratings, and market research publications.

U.S. states, municipalities, and political subdivisions
The U.S. states, municipalities, and political subdivisions portfolio contains debt securities issued by U.S. domiciled state and municipal entities. These securities are generally priced by independent pricing services using the techniques for U.S. government and government agency securities.

Preferred stocks
The fair value of preferred stocks is generally priced by independent pricing services using an evaluated pricing model that calculates the appropriate spread over a comparable security for each issue. Key inputs include exchange prices (underlying and common stock of same issuer), benchmark yields, reported trades, broker-dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, and reference data including sector, coupon, credit quality ratings, duration, credit enhancements, early redemption features, and market research publications.

Level 3 Investments
Level 3 valuations are generated from techniques that use assumptions not observable in the market. These unobservable assumptions reflect Sirius Group's assumptions, that market participants would use in valuing the investment. Generally, certain securities may start out as Level 3 when they are originally issued but as observable inputs become available in the market, they may be reclassified to Level 2.

Sirius Group employs a number of procedures to assess the reasonableness of the fair value measurements for its other long-term investments, including obtaining and reviewing the audited annual financial statements of hedge funds and private equity funds and periodically discussing each fund's pricing with the fund manager. However, since the fund managers do not provide sufficient information to evaluate the pricing inputs and methods for each underlying investment, the inputs are considered to be unobservable.

The fair values of Sirius Group's investments in private equity securities and private debt instruments have been classified as Level 3 measurements. They are carried at fair value and are initially valued based on transaction price and their valuation is subsequently estimated based on available evidence such as a market transaction in similar instruments and other financial information for the issuer.

Investments measured using Net Asset Value
The fair value of Sirius Group's investments in hedge funds and private equity funds has been determined using net asset value. The hedge fund's administrator provides quarterly updates of fair value in the form of Sirius Group's proportional interest in the underlying fund's net asset value (collectively "NAV"), which is deemed to approximate fair value, generally with a three month delay in valuation. The fair value of investment in hedge funds is measured using the NAV practical expedient and therefore has been not categorized within the fair value hierarchy. The private equity funds provide quarterly or semi-annual partnership capital statements with a three or six month delay which are used as a basis for valuation. These private equity investments vary in investment strategies and are not actively traded in any open markets.

The fair value of these investments are measured using NAV practical expedient and therefore have not been categorized with the fair value hierarchy. Due to a lag in reporting, some of the fund managers, fund administrators, or both, are unable to provide final fund valuations as of the Company's reporting date. In these circumstances, Sirius Group estimates the return of the current period and uses all credible information available. This includes utilizing preliminary estimates reported by its fund managers and using other information that is available to Sirius Group with respect to the underlying investments, as necessary.

Fair Value Measurements by Level

The following tables summarize Sirius Group's financial assets and liabilities measured at fair value as of December 31, 2018 and 2017 by level:

	2018			
(Millions)	**Fair value**	**Level 1 inputs**	**Level 2 inputs**	**Level 3 inputs**
Assets measured at fair value				
Fixed maturity investments:				
U.S. Government and government agency	$ 167.9	$ 164.7	$ 3.2	$ -
Corporate debt securities	695.8	-	695.8	-
Mortgage-backed and asset-backed securities	1,021.1	-	1,021.1	-
Non-U.S. government and government agency	50.3	42.9	7.4	-
Preferred stocks	8.5	-	3.1	5.4
U.S. States, municipalities, and political subdivision	2.8	-	2.8	-
Total fixed maturity investments	**1,946.4**	**207.6**	**1,733.4**	**5.4**
Short-term investments	681.7	645.6	36.1	-
Equity securities	380.0	380.0	-	-
Other long-term investments(1)	63.6	-	-	63.6
Total investments	**$ 3,071.7**	$ **1,233.2**	**$ 1,769.5**	**$ 69.0**
Derivative instruments	4.1	-	-	4.1
Total assets measured at fair value	**$ 3,075.8**	$ **1,233.2**	**$ 1,769.5**	**$ 73.1**
Liabilities measured at fair value				
Contingent consideration liabilities	$ 8.9	$ -	$ -	$ 8.9
Derivative instruments	5.1	0.5	-	4.6
Total liabilities measured at fair value	**$ 14.0**	**$ 0.5**	**$ -**	**$ 13.5**

(1) Excludes fair value of $301.4 associated with hedge funds and private equity funds which fair value is measured at net asset value using the practical expedient.

	2017			
(Millions)	**Fair value**	**Level 1 inputs**	**Level 2 inputs**	**Level 3 inputs**
Assets measured at fair value				
Fixed maturity investments:				
U.S. Government and government agency	$ 84.8	$ 83.2	$ 1.6	$ -
Corporate debt securities	1,014.5	-	1,014.5	-
Mortgage-backed and asset-backed securities	956.0	-	956.0	-
Non-U.S. government and government agency	107.2	94.8	12.4	-
Preferred stocks	9.7	-	1.7	8.0
U.S. States, municipalities, and political subdivision	3.8	-	3.8	-
Total fixed maturity investments	**2,176.1**	**178.0**	**1,990.1**	**8.0**
Short-term investments	594.2	535.4	58.8	-
Equity securities	299.2	298.6	0.6	-
Other long-term investments(1)	64.2	-	-	64.2
Total investments	**$ 3,133.7**	$ **1,012.0**	**$ 2,049.5**	**$ 72.2**
Derivative instruments	4.5	-	-	4.5
Total assets measured at fair value	**$ 3,138.2**	$ **1,012.0**	**$ 2,049.5**	**$ 76.7**
Liabilities measured at fair value				
Contingent consideration liabilities	$ 13.3	$ -	$ -	$ 13.3
Derivative instruments	10.6	-	-	10.6
Total liabilities measured at fair value	**$ 23.9**	$ **-**	**$ -**	**$ 23.9**

(1) Excludes fair value of $205.3 associated with hedge funds and private equity funds which fair value is measured at net asset value using the practical expedient.

Rollforward of Level 3 Fair Value Measurements

The following tables present changes in Level 3 for financial instruments measured at fair value for the years ended December 31, 2018 and 2017:

	2018			
(Millions)	**Fixed maturities**	**Other long-term investments**[(1)]	**Derivative instruments assets &(liabilities)**	**Contingent consideration (liabilities)**
Balance at January 1, 2018	$ 8.0	$ 64.2	$ (6.1)	$ (13.3)
Fair value of contingent consideration liabilities at date of purchase (See **Note 3**)	-	-	-	-
Total realized and unrealized gains	(6.1)	6.8	12.0	3.5
Foreign currency losses through Other Comprehensive Income	-	(4.4)	-	-
Purchases	4.0	1.2	-	-
Sales/settlements	(0.5)	(4.2)	(6.4)	0.9
Transfers out	-	-	-	-
Balance at December 31, 2018	**$ 5.4**	**$ 63.6**	**$ (0.5)**	**$ (8.9)**

[(1)] Excludes fair value of $301.5 associated with hedge funds and private equity funds which fair value is measured at net asset value using the practical expedient.

	2017			
(Millions)	**Fixed maturities**	**Other long-term investments**[(1)]	**Derivative instruments assets &(liabilities)**	**Contingent consideration (liabilities)**
Balance at January 1, 2017	$ 27.7	$ 29.1	$ 12.7	$ -
Fair value of contingent consideration liabilities at date of purchase (See **Note 3**)	-	-	-	(79.1)
Total realized and unrealized gains	(4.9)	(0.5)	(14.6)	35.2
Foreign currency losses through Other Comprehensive Income	(0.1)	1.0	-	-
Purchases	4.7	36.0	-	-
Sales/settlements	(1.0)	(1.4)	(4.2)	30.6
Transfers out[(2)]	(18.4)	-	-	-
Balance at December 31, 2017	**$ 8.0**	**$ 64.2**	**$ (6.1)**	**$ (13.3)**

[(1)] Excludes fair value of $205.3 associated with hedge funds and private equity funds which fair value is measured at net asset value using the practical expedient.
[(2)] Transfer from Level 3 to Level 2.

Fair Value Measurements – transfers between levels
There were no transfers between Level 3 and Level 2 measurements for the year ended December 31, 2018.

During 2017, two fixed maturity securities classified as Level 3 measurements in the prior period were recategorized as a Level 2 measurement because quoted market prices for similar securities that were considered reliable and could be validated against an alternative source were available as of December 31, 2017. These measurements comprise “Transfers out” of Level 3 and “Transfers in” to Level 2 of $18.4 million for the period ended December 31, 2017.

Significant Unobservable Inputs

The table below presents information about the significant unobservable inputs used for recurring fair value measurements for certain Level 3 instruments as of December 31, 2018 and 2017, and includes only those instruments for which information about the inputs is reasonably available to Sirius Group, such as data from independent third-party valuation service providers and from internal valuation models.

(Millions)	2018			
Description	**Valuation technique(s)**	**Fair value**	**Unobservable input**	
Private equity securities [1]	Share price of recent transaction	$32.5	Purchase share price	$40.63
Private equity securities [1]	Multiple of GAAP book value	$14.7	Book value multiple	0.9X
Private debt instrument [1]	Purchase price of recent transaction	$9.0	Purchase price	$9.0
Private debt instrument [1]	Purchase price of recent transaction	$6.0	Purchase price	$6.0
Preferred stock [1]	Share price of recent transaction	$4.6	Purchase price	$1.88
Weather derivatives [2]	Third party appraisal	$3.9	Broker quote	$3.9
Common stock [1]	Purchase price of recent transaction	$0.9	Purchase price	$1.88
Preferred stock [1]	Share price of recent transaction	$0.8	Purchase price	$0.8
Common stock [1]	Share price of recent transaction	$0.3	Purchase price	$10.0
Private debt instrument [1]	Purchase price of recent transaction	$0.2	Purchase price	$0.2
Interest rate cap [2]	Third party appraisal	$0.2	Broker quote	$0.2
Currency swaps [2]	Third party appraisal	$(4.6)	Broker quote	$(4.6)
Contingent consideration	External valuation model	$(8.9)	Discounted future payments	$(8.9)

[1] *As of December 31, 2018, each asset type consists of one security.*
[2] *See **Note 13** for discussion of derivative instruments.*

(Millions)	2017			
Description	**Valuation technique(s)**	**Fair value**	**Unobservable input**	
Private equity securities [1]	Share price of recent transaction	$25.0	Purchase share price	$31.25
Private equity securities [1]	Multiple of GAAP book value	$17.2	Book value multiple	1.0X
Private debt instrument [1]	Purchase price of recent transaction	$9.0	Purchase price	$9.0
Private debt instrument [1]	Purchase price of recent transaction	$9.0	Purchase price	$9.0
Preferred stock [1]	Purchase price of recent transaction	$6.0	Average share price	$0.6
Weather derivatives [2]	Third party appraisal	$4.2	Broker quote	$4.2
Private debt instrument [1]	Internal valuation model	$2.5	Purchase price less pay down	$2.5
Preferred stock [1]	Share price of recent transaction	$2.0	Average share price	$11.79
Private debt instrument [1]	Purchase price of recent transaction	$1.5	Purchase price	$1.5
Interest rate cap [2]	Third party appraisal	$0.3	Broker quote	$0.3
Currency swaps [2]	Third party appraisal	$(10.6)	Broker quote	$(10.6)
Contingent consideration	External valuation model	$(13.3)	Discounted future payments	$(13.3)

[1] *As of December 31, 2017, each asset type consists of one security.*
[2] *See **Note 13** for discussion of derivative instruments.*

Financial instruments disclosed, but not carried at fair value
Sirius Group uses various financial instruments in the normal course of its business. The carrying values of Cash, Accrued investment income, certain other assets, Accounts payable on unsettled investment purchases, certain other liabilities, and other financial instruments not included in the table below approximated their fair values at December 31, 2018 and 2017, due to their respective short maturities. As these financial instruments are not actively traded, their respective fair values are classified within Level 3. The following table includes financial instruments for which the carrying value differs from the estimated fair values at December 31, 2018 and 2017:

	2018		**2017**	
(Millions)	**Fair value[1]**	**Carrying value**	**Fair value[1]**	**Carrying value**
Liabilities:				
2017 SEK Subordinated Notes	$ 309.5	$ 303.6	$ 341.4	$ 330.7
2016 SIG Senior Notes	$ 347.6	$ 393.2	$ 392.3	$ 392.5

[1]*Fair value estimated by internal pricing and considered a Level 3 measurement.*

Fair Value Measurements on a Non-Recurring Basis
Sirius Group measures the fair value of certain assets on a non-recurring basis, generally quarterly, annually, or when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. These include goodwill, indefinite-lived intangible assets, and long-lived assets. Sirius Group uses a variety of techniques to measure the fair value of these assets when appropriate, as described below:

Goodwill and Indefinite-Lived Intangible Assets: The preliminary fair value of the goodwill and indefinite-lived intangible asset acquired as part of the acquisitions of both IMG and Armada (see **Note 3**) was determined using the income valuation and market valuation methodologies. The income approach determines value for an asset based on the present value of cash flows projected to be generated over the remaining economic life of the asset being measured. The net cash flows are discounted to present value using a discount rate that reflects the relative risk of achieving the cash flow and the time value of money. The market approach is a valuation technique that uses prices and other relevant information generated by market transactions involving identical or comparable assets or group of assets.

Determining the fair value goodwill and indefinite-lived intangible assets acquired requires the exercise of significant judgment, including the amount and timing of expected future cash flows, long-term growth rates and discount rates. The cash flows employed in the valuation are based on Sirius Group's best estimates of future sales, earnings, and cash flows after considering factors such as general market conditions, changes in working capital, long term business plans, and recent operating performance. Use of different estimates and judgments could yield different results.

Sirius Group tests goodwill and indefinite-lived intangible assets for impairment whenever events or changes in circumstances indicate the carrying amount may not be recoverable. When Sirius Group determines goodwill and indefinite-lived intangible assets may be impaired, Sirius Group uses techniques, including discounted expected future cash flows, to measure fair value. Sirius Group used Level 3 inputs to measure and record an $8.0 million and $5.0 million impairment of Trade Names indefinite-lived intangible asset during 2018 and 2017, respectively, that were recorded in Impairment of Intangible Assets in the Consolidated Statements of (Loss) Income. (See **Note 10**).

Long-Lived Assets: Sirius Group tests its long-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of a long-lived asset may not be recoverable.

Note 10. Goodwill and intangible assets

Goodwill represents the excess of the amount paid to acquire subsidiaries over the fair value of identifiable net assets at the date of acquisition. Intangible assets consist primarily of distribution relationships, trade names, customer relationships, technology, and insurance licenses. Finite-life intangible assets are measured at their acquisition date fair values, are amortized over their economic lives, and presented net of accumulated amortization on the balance sheet.

Goodwill is not amortized, but rather is evaluated for impairment on an annual basis, or whenever indications of potential impairment exist. In the absence of any indications of potential impairment, the evaluation of goodwill is performed during the fourth quarter of each year. Sirius Group uses widely accepted valuation techniques to determine the fair value of its reporting units used in its annual goodwill impairment analysis. Sirius Group's valuation is primarily based on qualitative and quantitative assessments regarding the fair value of the reporting unit relative to its carrying value. Sirius Group models the fair value of the reporting unit based on projected earnings and cash flows of the reporting unit.

Intangible assets with indefinite lives are evaluated for impairment at least annually and when events or changes in circumstances indicate that it is more likely than not that the asset is impaired.

The following table shows the change in goodwill, intangible assets with an indefinite life, and intangible assets with a finite life during the years ended December 31, 2018 and 2017:

(Millions)	Goodwill	Intangible assets with an indefinite life	Intangible assets with a finite life	Total
Net balance at December 31, 2016[(1)]	**$ -**	**$ 5.0**	**$ -**	**$ 5.0**
Additions[(2)]	400.7	27.0	199.5	627.2
Foreign currency translation[(2)]	0.3	-	-	0.3
Impairments[(2)]	-	(5.0)	-	(5.0)
Amortization[(2)]	-	-	(10.2)	(10.2)
Net balance at December 31, 2017[(2)]	**401.0**	**27.0**	**189.3**	**617.3**
Additions[(3)]	-	3.1	-	3.1
Foreign currency translation[(2)]	(0.4)	-	-	(0.4)
Impairments[(2)]	-	(8.0)	-	(8.0)
Amortization[(2)]	-	-	(15.8)	(15.8)
Net balance at December 31, 2018	**$ 400.6**	**$ 22.1**	**$ 173.5**	**$ 596.2**

[(1)]*Net balance at December 31, 2016 for Intangible assets with an indefinite life relate to insurance licenses allocated to the Runoff & Other segment.*
[(2)]*Foreign currency translation, impairments, and amortization in 2017 and 2018 relate to Armada and IMG and are allocated to the Global A&H segment.*
[(3)]*Additions in 2018 relate to insurance licenses allocated to the Runoff & Other segment.*

For the years ended December 31, 2018 and 2017, Sirius Group recognized an impairment of Intangible assets with an indefinite life that relate to a trade name intangible asset acquired as part of the acquisition of IMG. The impairments resulted from lower than anticipated growth when comparing the forecasted results against a reforecast of results at year end. A quantitative impairment review of the IMG trade name intangible asset was performed by applying the royalty replacement method to determine the asset's fair value as of December 31, 2018 and 2017, respectively. Under the royalty replacement method, the fair value of IMG's trade names intangible asset was determined based on a market participant's view of the royalty that would be paid to license the right to use the trade name. This quantitative analysis incorporated several assumptions including forecasted future revenues and cash flows, estimated royalty rate, based on similar licensing transactions and market royalty rates, and discount rate, which incorporates assumptions such as weighted-average cost of capital and risk premium. As a result of the impairment testing, the carrying value of IMG's trade names intangible asset exceeded its estimated fair value and an impairment of $ 8.0 million and $5.0 million was recorded as Impairment of intangible assets on the Consolidated Statements of (Loss) Income for the years ended December 31, 2018 and 2017, respectively. For the year ended December 31, 2016, Sirius Group did not recognize any impairments on Intangible assets with an indefinite life.

The following tables presents the components of goodwill and intangible assets as of December 31, 2018 and 2017:

	2018				
(Millions)	Gross balance	Accumulated amortization	Impairments	Foreign currency translation	Net balance
Customer relationships – finite life[(1)]	$ 17.0	$ (2.2)	$ -	$ -	$ 14.8
Distribution relationships – finite life[(1)]	151.0	(15.8)	-	-	135.2
Goodwill – infinite life[(1)]	400.7	-	-	(0.1)	400.6
Insurance licenses – infinite life[(2)]	8.1	-	-	-	8.1
Technology – finite life[(1)]	15.5	(4.3)	-	-	11.2
Trade names – finite life[(1)]	16.0	(3.7)	-	-	12.3
Trade names – infinite life[(1)]	27.0	-	(13.0)	-	14.0
Net balance at December 31, 2018	**$ 635.3**	**$ (26.0)**	**$ (13.0)**	**$ (0.1)**	**$ 596.2**

[(1)]*Allocated to the Global A&H segment.*
[(2)]*Allocated to the Runoff & Other segment.*

	2017				
(Millions)	**Gross balance**	**Accumulated amortization**	**Impairments**	**Foreign currency translation**	**Net balance**
Customer relationships – finite life[1]	$ 17.0	$ (0.8)	$ -	$ -	$ 16.2
Distribution relationships – finite life[1]	151.0	(6.2)	-	-	144.8
Goodwill – infinite life[1]	400.7	-	-	0.3	401.0
Insurance licenses – infinite life[2]	5.0	-	-	-	5.0
Technology – finite life[1]	15.5	(1.6)	-	-	13.9
Trade names – finite life[1]	16.0	(1.6)	-	-	14.4
Trade names – infinite life[1]	27.0	-	(5.0)	-	22.0
Net balance at December 31, 2017	**$ 632.2**	**$ (10.2)**	**$ (5.0)**	**$ 0.3**	**$ 617.3**

[1]*Allocated to the Global A&H segment.*
[2]*Allocated to the Runoff & Other segment.*

The amortization of intangibles assets for the year ended December 31, 2018 and 2017 was $15.8 million and $10.2 million, respectively. There was no amortization of intangible assets during the year ended December 31, 2016.

The estimated remaining amortization expense for Sirius Group's intangible assets with finite lives is as follows:

(*Millions*)	
2019	$ 15.8
2020	15.8
2021	15.8
2022	14.6
2023	13.8
2024 and thereafter	97.7
Total remaining amortization expense	**$ 173.5**

The estimated remaining useful lives of these intangible assets range from 3.3 to 20.9 years.

Note 11. Debt and standby letters of credit facilities

Sirius Group's debt outstanding as of December 31, 2018 and 2017 consisted of the following:

(Millions)	**December 31, 2018**	**Effective rate [1]**	**December 31, 2017**	**Effective rate [1]**
2017 SEK Subordinated Notes, at face value	$ 307.6	3.8%	$ 335.2	3.5%
Unamortized issuance costs	(4.0)		(4.5)	
2017 SEK Subordinated Notes, carrying value	303.6		330.7	
2016 SIG Senior Notes, at face value	400.0	4.7%	400.0	4.7%
Unamortized discount	(2.6)		(2.9)	
Unamortized issuance costs	(4.2)		(4.6)	
2016 SIG Senior Notes, carrying value	393.2		392.5	
Total debt	**$ 696.8**		**$ 723.2**	

[1] *Effective rate considers the effect of the debt issuance costs.*

A schedule of contractual repayments of Sirius Group's debt as of December 31, 2018 follows:

(Millions)	**December 31, 2018**
Due in one year or less	$ -
Due in one to three years	-
Due in three to five years	-
Due after five years	707.6
Total	**$ 707.6**

2017 SEK Subordinated Notes

On September 22, 2017, Sirius Group issued floating rate callable subordinated notes denominated in Swedish kronor ("SEK") in the amount of SEK 2,750.0 million (or $346.1 million on date of issuance) at a 100% issue price ("2017 SEK Subordinated Notes"). The 2017 SEK Subordinated Notes were issued in an offering that was exempt from the registration requirements of the Securities Act of 1933. The 2017 SEK Subordinated Notes bear interest on their principal amount at a floating rate equal to the applicable Stockholm Interbank Offered Rate ("STIBOR") for the relevant interest period plus an applicable margin, payable quarterly in arrears on March 22, June 22, September 22, and December 22 in each year commencing on December 22, 2017, until maturity in September 2047.

Beginning on September 22, 2022, the 2017 SEK Subordinated Notes may be redeemed, in whole or in part, at Sirius Group's option. In addition, within 90 days following the occurrence of a Specified Event (as defined below), the 2017 SEK Subordinated Notes may be redeemed, in whole but not in part, at Sirius Group's option. "Specified Event" means (a) an "Additional Amounts Event" in connection with a change in laws, rules or regulations as a result of which Sirius Group is obligated to pay additional amounts on the notes in respect of any withholding or deduction for taxes, (b) a "Tax Event" in connection with a change in laws, rules or regulations as a result of which interest on the notes is no longer fully deductible by Sirius Group for income tax purposes in the applicable jurisdiction (to the extent that such interest was so deductible as of the time of such Tax Event), (c) a "Rating Methodology Event" in connection with a change in, or clarification to, the rating methodology of Standard & Poor's or Fitch that results in a materially unfavorable capital treatment of the notes, or (d) a "Regulatory Event" in connection with a change in, or clarification to, applicable supervisory regulations that results in the notes no longer qualifying as Tier 2 Capital.

Sirius Group incurred $4.6 million in expenses related to the issuance of the 2017 SEK Subordinated Notes (including SEK 27.5 million, or $3.5 million, in underwriting fees), which have been deferred and are being recognized into interest expense over the life of the 2017 SEK Subordinated Notes.

A portion of the proceeds were used to fully redeem the outstanding $250.0 million Sirius International Group, Ltd. Preference Shares. (See **Note 15**).

Taking into effect the amortization of all underwriting and issuance expenses, and applicable STIBOR, the 2017 SEK Subordinated Notes yielded an effective rate of approximately 3.8% and 3.5% for the years ended December 31, 2018 and 2017, respectively. Sirius Group recorded $11.7 million and $3.3 million of interest expense, inclusive of amortization of issuance costs, on the 2017 SEK Subordinated Notes for the years ended December 31, 2018 and 2017, respectively.

2016 SIG Senior Notes

On November 1, 2016, Sirius Group issued $400.0 million face value of senior unsecured notes ("2016 SIG Senior Notes") at an issue price of 99.209% for net proceeds of $392.4 million after taking into effect both deferrable and non-deferrable issuance costs. The SIG Senior Notes were issued in an offering that was exempt from the registration requirements of the Securities Act of 1933. The 2016 SIG Senior Notes bear an annual interest rate of 4.6%, payable semi-annually in arrears on May 1 and November 1, in each year commencing on May 1, 2017, until maturity in November 2026.

Sirius Group incurred $5.1 million in expenses related to the issuance of the 2016 SIG Senior Notes (including $3.4 million in underwriting fees), which have been deferred and are being recognized into interest expense over the life of the 2016 SIG Senior Notes.

Taking into effect the amortization of the original issue discount and all underwriting and issuance expenses, the 2016 SIG Senior Notes yield an effective rate of approximately 4.7% per annum. Sirius Group recorded $19.1 million, $19.1 million, and $3.2 million of interest expense, inclusive of amortization of issuance costs on the 2016 SIG Senior Notes for the years ended December 31, 2018, 2017, and 2016, respectively.

2007 SIG Senior Notes

During 2016, using the funds received from the issuance of the 2016 SIG Senior Notes, Sirius Group retired the $400.0 million face value of senior unsecured notes that were issued in 2007 ("2007 SIG Senior Notes"). The retirement of the 2007 SIG Senior Notes resulted in a $5.7 million loss recorded in interest expense, which includes the write-off of the remaining $0.1 million in unamortized deferred costs and original issue discount at the time of retirement.

In anticipation of the issuance of the 2007 SIG Senior Notes, Sirius Group entered into an interest rate lock agreement to hedge its interest rate exposure from the date of the agreement until the pricing of the 2007 SIG Senior Notes. The agreement was terminated on March 15, 2007 with a loss of $2.4 million, which was recorded in other comprehensive income. The loss was reclassified from accumulated other comprehensive income over the life of the 2007 SIG Senior Notes using the interest method and was included in interest expense until it was retired in 2016. When the 2007 SIG Senior Notes were retired, the $0.1 million loss remaining in accumulated other comprehensive income was reclassified to interest expense.

Prior to retirement, taking into effect the amortization of the original issue discount and all underwriting and issuance expenses, including the interest rate lock agreement, the 2007 SIG Senior Notes yielded an effective rate of approximately 6.5% per annum. Sirius Group recorded $31.2 million of interest expense, inclusive of loss on repurchase, amortization of issuance costs and the interest rate lock agreement, on the 2007 SIG Senior Notes for each of the year ended December 31, 2016.

Old Lyme Note

On April 25, 2017, Sirius Group made a payment of $3.8 million to retire the Old Lyme Note that was originally issued as part of the acquisition of the runoff loss reserve portfolio of Old Lyme Insurance Company Ltd. As part of the acquisition in 2011, Sirius Group entered into a five-year $2.1 million note that was subject to upward adjustments for favorable loss reserve development (up to 50% of $6.0 million) and downward adjustments for any adverse loss reserve development. From inception, Sirius Group had favorable loss reserve development of $3.4 million on the Old Lyme loss reserve position that resulted in an increase of $1.7 million on the Old Lyme Note.

Standby Letter of Credit Facilities

On November 9, 2018, Sirius International renewed two standby letter of credit facility agreements totaling $160 million to provide capital support for Lloyd's Syndicate 1945. The first letter of credit is a renewal of a $125 million facility with Nordea Bank Finland Abp, London Branch, which is issued on an unsecured basis. The second letter of credit is a $35 million facility with DNB Bank ASA, Sweden Branch, $25 million of which is issued on an unsecured basis. Each facility is renewable annually. The above referenced facilities are subject to various affirmative, negative and financial covenants that the Company considers to be customary for such borrowings, including certain minimum net worth and maximum debt to capitalization standards.

Sirius International has other secured letter of credit and trust arrangements with various financial institutions to support its insurance operations. As of December 31, 2018 and 2017, respectively, these secured letter of credit and trust arrangements were collateralized by pledged assets and assets in trust of SEK 2.9 billion and SEK 2.1 billion, or $321.3 million and $261.2 million (based on the December 31, 2018 and December 31, 2017 SEK to USD exchange rates). As of December 31, 2018 and 2017, respectively, Sirius America's trust arrangements were collateralized by pledged assets and assets in trust of $56.2 million and $55.8 million. As of December 31, 2018 and 2017, respectively, Sirius Bermuda Insurance Company's ("Sirius Bermuda") trust arrangements were collateralized by pledged assets and assets in trust of $319.7 million and $123.3 million.

Revolving Credit Facility

In February 2018, the Company entered into a three-year, $300 million senior unsecured revolving credit facility (the "Facility"). The Facility provides access to loans for working capital and general corporate purposes, and letters of credit to support obligations under insurance and reinsurance agreements and retrocessional agreements. The Facility is subject to various affirmative, negative and financial covenants that Sirius Group considers to be customary for such borrowings, including certain minimum net worth, maximum debt to capitalization and financial strength rating standards. As of December 31, 2018, there were no outstanding borrowings under the Facility.

Debt and Standby Letter of Credit Facility Covenants

As of December 31, 2018, Sirius Group was in compliance with all of the covenants under the 2017 SEK Subordinated Notes, the 2016 SIG Senior Notes, the Nordea Bank Finland Abp, London Branch facility, and the DNB Bank ASA, Sweden Branch facility. In addition, as of December 31, 2018, Sirius Group was in compliance with all of the covenants under the Facility.

Interest

Total interest expense incurred by Sirius Group for its indebtedness was $30.8 million, $22.4 million, and $34.6 million in 2018, 2017, and 2016. Total interest paid by Sirius Group for its indebtedness was $30.0 million, $22.0 million, and $31.6 million in 2018, 2017, and 2016, respectively.

Note 12. Income taxes

The Company and its Bermuda domiciled subsidiaries are not subject to Bermuda income tax under current Bermuda law. In the event there is a change in the current law such that taxes are imposed, the Company and its Bermuda domiciled subsidiaries would be exempt from such tax until March 31, 2035, pursuant to the Bermuda Exempted Undertakings Tax Protection Act of 1966. The Company has subsidiaries and branches that operate in various other jurisdictions around the world that are subject to tax in the jurisdictions in which they operate. The jurisdictions in which the Company's subsidiaries and branches are subject to tax are Australia, Belgium, Canada, Denmark, Germany, Gibraltar, Hong Kong (China), Luxembourg, Malaysia, the Netherlands, Shanghai (China), Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Sirius Group's net income (loss) before income taxes for the years ended December 31, 2018, 2017, and 2016 was generated in the following domestic and foreign jurisdictions:

(Millions)	**2018**	**2017**	**2016**
Domestic:			
Bermuda	$ 28.3	$ (112.9)	$ 31.7
Foreign:			
U.S.	(10.1)	(19.2)	(25.3)
U.K.	(14.9)	(27.0)	(7.0)
Sweden	(74.2)	(26.1)	(29.5)
Luxembourg	60.3	43.4	105.3
Netherlands	(0.1)	18.2	(0.1)
Other	-	(1.0)	(0.7)
Total income (loss) before income taxes	**$ (10.7)**	**$ (124.6)**	**$ 74.4**

The total income tax (expense) benefit for the years ended December 31, 2018, 2017, and 2016 consisted of the following:

(Millions)	2018	2017	2016
Current tax (expense):			
U.S. Federal	$ (7.0)	$ (0.9)	$ 2.1
State	(2.2)	(2.0)	(1.6)
Non-U.S.	(19.8)	(3.6)	(11.4)
Total current tax (expense)	**(29.0)**	**(6.5)**	**(10.9)**
Deferred tax (expense) benefit:			
U.S. Federal	14.5	(10.7)	16.0
State	-	-	-
Non-U.S.	(25.9)	(9.2)	2.3
Total deferred tax (expense) benefit	**(11.4)**	**(19.9)**	**18.3**
Total income tax (expense) benefit	**$ (40.4)**	**$ (26.4)**	**$ 7.4**

Effective Rate Reconciliation

A reconciliation of taxes calculated using the 22% Swedish statutory rate (the rate at which the majority of Sirius Group's worldwide operations are taxed) to the income tax (expense) benefit on pre-tax income follows:

(Millions)	2018	2017	2016
Tax (expense) benefit at the statutory rate	$ 2.3	$ 27.4	$ (16.4)
Differences in taxes resulting from:			
Tax reserve adjustments	(42.0)	(1.2)	(6.0)
Tax rate change enacted in Sweden	15.4	-	-
Tax on Safety Reserve	(15.3)	-	-
Foreign tax credits	10.8	2.2	6.9
Section 197 Intangible as result of internal restructuring	6.9	-	-
Non-Sweden earnings	(5.2)	(21.7)	1.2
Gain on internal restructuring	(9.1)	-	-
State taxes expense	(2.9)	(0.6)	(1.0)
Change in valuation allowance	2.3	1.4	55.0
Withholding taxes	(1.9)	(0.8)	(1.4)
Tax rate change - other	0.1	(29.7)	-
Tax rate change enacted in Luxembourg	-	0.2	(30.6)
Other, net	(1.8)	(3.6)	(0.3)
Total income tax (expense) benefit on pre-tax earnings	**$ (40.4)**	**$ (26.4)**	**$ 7.4**

The non-Sweden component of pre-tax (loss) income was $63.6 million, $(98.6) million, and $103.9 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Effective January 1, 2019, Sweden enacted reductions in its corporate tax rate from 22% to 21.4% from 2019 and then to 20.6% from 2021. This resulted in a reduction in the net deferred tax liability for Sirius Group's Swedish entities as of December 31, 2018 in the amount of $15.4 million. Further, as part of the same enacted tax legislation, Sweden introduced a standard taxable yield on property and casualty insurance companies' safety reserves. Insurers recognizing a safety reserve must recognize an annual standard yield on safety reserve as taxable income. The standard income is equal to the government bond rate at the end of November the year before the year during which the insurers income year ends multiplied by the opening balance of the safety reserve for that year. In addition, an insurer with a safety reserve opening balance on January 1, 2021 is required to recognize notional taxable income equal to 6 percent of the safety reserve at the start of that income year. As a result of this newly enacted one-time tax determined by reference to the future safety reserve balance, Sirius Group has recorded a deferred tax expense of $15.3 million as of December 31, 2018.

The Company previously applied Staff Accounting Bulletin 118 ("SAB 118"), which provided guidance on accounting for the tax effects of the TCJA which was enacted into law in the U.S. in December 2017. SAB 118 addresses situations where accounting for certain income tax effects of the TCJA under ASC 740, Income Taxes ("ASC 740"), may be incomplete upon issuance of an entity's financial statements and provides a one-year measurement period from the enactment date to complete the accounting under ASC 740. The Company has completed its accounting for all material tax effects of the TCJA and has recognized adjustments as of December 31, 2018 as described below.

The TCJA includes a new 21% corporate tax rate, the impacts of which (including on Sirius Group's deferred tax assets) were already taken into account in Sirius Group's financial results for the year ended December 31, 2017. The TCJA also includes a new BEAT provision, which is essentially a minimum tax that is potentially applicable to certain otherwise deductible payments made by U.S. entities to non-U.S. affiliates, including cross-border interest payments and reinsurance premiums. The statutory BEAT rate is 5% in 2018 and will rise to 10% in 2019-2025 and then 12.5% in 2026 and thereafter. The TCJA also includes provisions for GILTI under which taxes on foreign income are imposed on the excess of a deemed return on tangible assets of certain foreign subsidiaries. Consistent with accounting guidance, Sirius Group will treat BEAT as an in period tax charge when incurred in future periods for which no deferred taxes need to be provided and has made an accounting policy election to treat GILTI taxes in a similar manner. No provision for income taxes related to BEAT or GILTI was recorded as of December 31, 2018. Sirius Group has completed its accounting for loss reserves based on the new discounting methodology prescribed by the TCJA and recognized an adjustment of $3.5 million without a net impact on total taxes since an offsetting deferred tax asset would also be recorded.

Sirius Group has capital and liquidity in many of its subsidiaries, some of which may reflect undistributed earnings. If such capital or liquidity were to be paid or distributed to the Company or Sirius Group's subsidiaries, as dividends or otherwise, they may be subject to income or withholding taxes. Sirius Group generally intends to operate, and manage its capital and liquidity, in a tax-efficient manner. However, the applicable tax laws in relevant countries are still evolving, including in response to guidance from the Organisation for Economic Cooperation and Development. Accordingly, such payments or earnings may be subject to income or withholding tax in jurisdictions where they are not currently taxed or at higher rates of tax than currently taxed, and the applicable tax authorities could attempt to apply income or withholding tax to past earnings or payments.

Tax Payments and Receipts

Net income tax payments to national, state, and local governments totaled $19.1 million, $16.7 million, and $8.3 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Deferred Tax Inventory

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts for tax purposes. An outline of the significant components of Sirius Group's deferred tax assets and liabilities follows:

(Millions)	**2018**	**2017**
Deferred income tax assets related to:		
Non-U.S. net operating loss carry forwards	$ 249.8	$ 305.1
U.S. federal net operating loss and capital carry forwards	33.8	34.7
Tax credit carry forwards	28.7	18.3
Loss reserve discount	7.3	8.9
Unearned premiums	3.1	1.5
Deferred interest	2.1	0.2
Incentive compensation and benefits accruals	1.9	2.0
Allowance for doubtful accounts	1.4	1.4
Foreign currency translations on investments and other assets	0.8	-
Net unrealized investment losses	-	1.8
Other items	2.7	3.6
Total gross deferred income tax assets	**331.6**	**377.5**
Valuation allowance	(64.3)	(71.8)
Total adjusted deferred tax asset	**267.3**	**305.7**
Deferred income tax liabilities related to:		
Safety reserve (See **Note 16**)	261.1	286.6
Intangible assets	28.7	42.0
Deferred acquisition costs	3.1	1.2
Purchase accounting	3.0	2.4
Investment basis differences	2.4	1.1
Net unrealized investment gains	0.3	-
Foreign currency translations on investments and other assets	-	7.3
Other items	3.6	3.2
Total deferred income tax liabilities	**302.2**	**343.8**
Net deferred tax (liability) asset	**$ (34.9)**	**$ (38.1)**

Sirius Group's deferred tax assets are net of U.S. federal and non-U.S. valuation allowances and, to the extent they relate to non-U.S. jurisdictions, they are shown at year-end exchange rates.

Of the $34.9 million net deferred tax liability as of December 31, 2018, $32.8 million relates to net deferred tax assets in U.S. subsidiaries, $155.8 million relates to net deferred tax assets in Luxembourg subsidiaries, $12.6 million relates to net deferred tax assets in United Kingdom subsidiaries and $236.1 million relates to net deferred tax liabilities in Sweden subsidiaries.

Net Operating Loss and Capital Loss Carryforwards

Net operating loss and capital loss carryforwards as of December 31, 2018, the expiration dates, and the deferred tax assets thereon are as follows:

(Millions)			2018		
	United States	**Luxembourg**	**Sweden**	**U.K.**	**Total**
2019-2023	$ 8.7	$ -	$ -	$ -	$ 8.7
2024-2038	151.9	0.1	-	-	152.0
No expiration date	-	871.5	273.0	72.0	1,216.5
Total	**160.6**	**871.6**	**273.0**	**72.0**	**1,377.2**
Gross deferred tax asset	33.8	226.7	10.8	12.3	283.6
Valuation allowance	-	(64.6)	-	-	(64.6)
Net deferred tax asset	**$ 33.8**	**$ 162.1**	**$ 10.8**	**$ 12.3**	**$ 219.0**

Sirius Group expects to utilize net operating loss carryforwards in Luxembourg of $668.9 million but does not expect to utilize the remainder as they belong to companies that are not expected to have sufficient taxable income in the future. Included in the U.S. net operating loss carryforwards are losses of $102.2 million subject to an annual limitation on utilization under Internal Revenue Code Section 382 and $11.0 million are subject to separately return limitation year ("SRLY") provisions of the consolidated return regulations. Of the Section 382 limited loss carryforwards, $9.6 million will expire between 2022 and 2025 and $92.6 million will expire between 2030 and 2032. The SRLY limited losses will expire between 2036 and 2037. Sirius Group expects to utilize all of the U.S. net operating loss carryforwards.

As of December 31, 2018, there are U.S. foreign tax credits carryforwards available of $16.7 million, of which an insignificant amount expires in 2019, and the remaining, which Sirius Group expects to use, will begin to expire in 2022. As of December 31, 2018, there are alternative minimum tax credit carryforwards of $0.1 million which do not expire and are expected to become fully refundable beginning in the 2022 tax year under the TCJA. Further, there are Swedish foreign tax credits carryforwards available of $11.9 million, which Sirius Group expects to use, and will expire between 2021 and 2023.

Valuation Allowance

Sirius Group records a valuation allowance against deferred tax assets if it becomes more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in income tax expense in the period of change. In determining whether or not a valuation allowance, or change therein, is warranted, Sirius Group considers factors such as prior earnings history, expected future earnings, carryback and carryforward periods, and strategies that if executed would result in the realization of a deferred tax asset. It is possible that certain planning strategies or projected earnings in certain subsidiaries may not be feasible to utilize the entire deferred tax asset, which could result in material changes to Sirius Group's deferred tax assets and tax expense.

Of the $64.6 million valuation allowance as of December 31, 2018, $64.6 million relates to net operating loss carryforwards in Luxembourg subsidiaries and an insignificant amount relates to other deferred tax assets in Swedish and United States subsidiaries.

Foreign Tax Credits

Sirius Re Holdings, Inc. ("SReHi") has an immaterial valuation allowance on foreign tax credits, which will expire in 2019. SReHi has an additional $16.7 million of foreign tax credits that will expire between the years 2020 and 2027, which are expected to be fully utilized. Sirius International Insurance Corporation (publ.) has $11.9 million of foreign tax credits that will expire between 2021 and 2023 and are expected to be fully utilized.

Uncertain Tax Positions

Recognition of the benefit of a given tax position is based upon whether a company determines that it is more likely than not that a tax position will be sustained upon examination based upon the technical merits of the position. In evaluating the more likely than not recognition threshold, Sirius Group must presume that the tax position will be subject to examination by a taxing authority with full knowledge of all relevant information. If the recognition threshold is met, then the tax position is measured at the largest amount of benefit that is more than 50% likely of being realized upon ultimate settlement.

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

(Millions)	**Permanent differences[1]**	**Temporary differences[2]**	**Interest and penalties[3]**	**Total**
Balance at January 1, 2016	**$ 19.8**	**$ 6.6**	**$ -**	**$ 26.4**
Changes in prior year tax positions	-	-	-	-
Tax positions taken during the current year	4.4	(2.5)	0.2	2.1
Lapse in statute of limitations	-	-	-	-
Settlements with tax authorities	-	-	-	-
Balance at December 31, 2016	**$ 24.2**	**$ 4.1**	**$ 0.2**	**$ 28.5**
Changes in prior year tax positions	0.2	(0.1)	0.1	0.2
Tax positions taken during the current year	3.8	(2.2)	-	1.6
Lapse in statute of limitations	(0.5)	-	-	(0.5)
Settlements with tax authorities	(0.3)	-	(0.2)	(0.5)
Balance at December 31, 2017	**$ 27.4**	**$ 1.8**	**$ 0.1**	**$ 29.3**
Changes in prior year tax positions	1.4	-	0.1	1.5
Tax positions taken during the current year	36.2	(1.7)	-	34.5
Lapse in statute of limitations	-	-	-	-
Settlements with tax authorities	(0.1)	-	-	(0.1)
Balance at December 31, 2018	**$ 64.9**	**$ 0.1**	**$ 0.2**	**$ 65.2**

[1] Represents the amount of unrecognized tax benefits that, if recognized, would impact the effective tax rate.
[2] Represents the amount of unrecognized tax benefits that, if recognized, would create a temporary difference between the reported amount of an item in the Consolidated Balance Sheets and its tax basis.
[3] Net of tax benefit.

If Sirius Group determines in the future that its reserves for unrecognized tax benefits on permanent differences and interest and penalties are not needed, the reversal of $64.9 million of such reserves as of December 31, 2018 would be recorded as an income tax benefit and would impact the effective tax rate. If Sirius Group determines in the future that its reserves for unrecognized tax benefits on temporary differences are not needed, the reversal of $0.1 million of such reserves as of December 31, 2018 would not impact the effective tax rate due to deferred tax accounting but would accelerate the payment of cash to the taxing authority. Most of Sirius Group’s reserves for unrecognized tax benefits on permanent differences relate to interest deductions denied by the Swedish Tax Authority ("STA"), as described further below.

Sirius Group classifies all interest and penalties on unrecognized tax benefits as part of income tax expense. During the years ended December 31, 2018, 2017, and 2016, Sirius Group recognized $0.1 million, $(0.1) million, and $0.2 million in interest income (expense), respectively, net of any tax benefit. The balance of accrued interest as of December 31, 2018 and 2017 is $0.2 million and $0.1 million, respectively, net of any tax benefit.

Tax Examinations

The STA has denied deductions claimed by two of the Company's Swedish subsidiaries in certain tax years for interest paid on intra-group debt instruments. Sirius Group has challenged the STA's denial in court based on the technical merits. In October 2018, one of the Swedish subsidiaries received an adverse decision from Sweden's Administrative Court, which Sirius Group has appealed. Sirius Group has taken into account this and other relevant developments in applicable Swedish tax law and has established a reserve for this uncertain tax position. As of December 31, 2018, the total amount of such reserve was $62.2 million.

In connection with this matter, Sirius Group has also taken into account the SPA by which Sirius Group was sold to CMIG International in 2016 and has recorded an indemnification asset. Pursuant to the SPA, the seller agreed to indemnify the buyer and Sirius Group for, among other things, (1) any additional tax liability in excess of Sirius Group's accounting for uncertain tax positions for tax periods prior to the sale of Sirius Group to CMIG International, and (2) an impairment in Sirius Group's net deferred tax assets resulting from a final determination by a tax authority. While Sirius Group is continuing to challenge the STA's denial based on the technical merits by appealing the adverse court decision received in October 2018, the ultimate resolution of these tax disputes is uncertain and no assurance can be given that there will be no material changes to Sirius Group's operating results or balance sheet in connection with these uncertain tax positions or the related indemnification.

With few exceptions, Sirius Group is no longer subject to U.S. federal, state or non-U.S. income tax examinations by tax authorities for years before 2014.

Note 13. Derivatives

Interest Rate Cap

Sirius Group entered into an interest rate swap (“Interest Rate Cap”) with two financial institutions where it paid an upfront premium and in return receives a series of quarterly payments based on the 3-month London Interbank Offered Rate (“LIBOR”) at the time of payment. The Interest Rate Cap does not qualify for hedge accounting. Changes in fair value are recognized as unrealized gains or losses and are presented within Other revenue. The fair value of the interest rate cap has been estimated using a non-binding single broker quote and, accordingly, has been classified as a Level 3 measurement as of December 31, 2018 and 2017. Collateral held is recorded within short-term investments with an equal amount recognized as a liability to return collateral. Sirius Group’s liability to return that collateral is based on the amounts provided by the counterparties and investment earnings thereon. The following table summarizes the Interest Rate Cap collateral balances held by Sirius Group and ratings by counterparty:

	2018	
(Millions)	**Collateral Balances Held**	**S&P Rating[1]**
Barclays Bank Plc	$ 0.2	A
Nordea Bank Finland Abp	0.1	AA-
Total	**$ 0.3**	

[1] *Standard & Poor's ratings as detailed above are: "AA-" (Very Strong, which is the fourth highest of twenty-three creditworthiness ratings) and "A" (Strong, which is the sixth highest of twenty-three credit worthiness ratings).*

Foreign Currency Swaps

Sirius Group executes foreign currency swaps to manage foreign currency exposure. The foreign currency swaps have not been designated or accounted for under hedge accounting. Changes in fair value are recognized as unrealized gains or losses and are presented within Net foreign exchange gains (losses). The fair value of the foreign currency swaps has been estimated using a non-binding single broker quote and accordingly, has been classified as a Level 3 measurement as of December 31, 2018 and 2017. Sirius Group does not provide or hold any collateral associated with the swaps.

Weather Derivatives

Sirius Group holds assets and assumes liabilities related to weather and weather contingent risk management products. Weather and weather contingent derivative contracts are entered into with the objective of generating profits in normal climatic conditions. Accordingly, Sirius Group’s weather and weather contingent derivatives are not designed to meet the criteria for hedge accounting under GAAP. Sirius Group receives payment of premium at the contract inception in exchange for bearing the risk of variations in a quantifiable weather index. Changes in fair value are recognized as unrealized gains or losses and are presented within Other revenue. Management uses available market data and internal pricing models based upon consistent statistical methodologies to estimate the fair value. Because of the significance of the unobservable inputs used to estimate the fair value of Sirius Group’s weather risk contracts, the fair value measurements of the contracts are deemed to be Level 3 measurements in the fair value hierarchy as at December 31, 2018 and 2017. Sirius Group does not provide or hold any collateral associated with the weather derivatives.

Equity Futures Contracts

During 2018, Sirius Group executed trades in equity futures contracts to hedge against a long position in Common equities. During 2018, the equity futures contracts were exited and were not renewed. The equity futures contracts were not designated or accounted for under hedge accounting. Changes in fair value are presented within Net realized investment gains (losses). The fair value of the equity put options is widely available and have quoted prices in active markets and accordingly, were classified as a Level 1 measurement.

Equity Put Options

During 2018, Sirius Group sold equity put options to hedge against a long position in Common equities. The equity put options were not designated or accounted for under hedge accounting. Changes in fair value are presented within Net unrealized investment (losses) gains. The fair value of the equity put options is widely available and have quoted prices in active markets and accordingly, were classified as a Level 1 measurement.

The following tables summarize information on the classification and amount of the fair value of derivatives not designated as hedging instruments within the Company's Consolidated Balance Sheets as at December 31, 2018 and 2017:

(Millions)	2018			2017		
Derivatives not designated as hedging instruments	**Notional value**	**Asset derivative at fair value[1]**	**Liability derivative at fair value[2]**	**Notional value**	**Asset derivative at fair value[1]**	**Liability derivative at fair value[2]**
Interest rate cap	$ 250.0	$ 0.2	$ -	$ 250.0	$ 0.3	$ -
Foreign currency swaps	$ 45.0	$ -	$ 4.6	$ 45.0	$ -	$ 10.6
Weather derivatives	$ 150.5	$ 3.9	$ -	$ 113.3	$ 4.2	$ -
Equity put options	$ 6.2	$ -	$ 0.5	$ -	$ -	$ -

[1]*Asset derivatives are classified within Other assets within the Company's Consolidated Balance Sheets at December 31, 2018 and 2017.*
[2]*Liability derivatives are classified within Other liabilities within the Company's Consolidated Balance Sheets at December 31, 2018 and 2017.*

The following table summarizes information on the classification and net impact on earnings, recognized in the Company's Consolidated Statements of (Loss) Income relating to derivatives during the years ended December 31, 2018, 2017 and 2016:

(Millions) **Derivatives not designated as hedging instruments**	**Classification of gains (losses) recognized in earnings**	**2018**	**2017**	**2016**
Interest rate cap	Other revenues	$ 0.1	$ (1.5)	$ (0.2)
Foreign currency swaps	Net foreign exchange gains (losses)	$ 6.9	$ (11.3)	$ 6.6
Weather derivatives	Other revenues	$ 5.2	$ (1.5)	$ 5.2
Equity futures contracts[1]	Net realized investment gains (losses)	$ 1.7	$ -	$ -

[1]*There were no Equity futures contracts at December 31, 2018.*

Note 14. Employee benefit plans and compensation plans

Employee Benefit Plans

Sirius Group operates several retirement plans in accordance with the local regulations and practices. These plans cover substantially all Sirius Group employees and provide benefits to employees in event of death, disability, or retirement.

Defined benefit plans

Swedish and German employees of Sirius International can participate in defined benefit plans which are based on the employees' pension entitlements and length of employment. In Sweden, where a defined benefit pension plan is mandated by the government, Sirius International's employees participate in collective agreements funded by Sirius International. These collective agreements are managed by third party trustees who calculate the pension obligation, invoice Sirius International for additional funding, and invest the funds. All employees in Germany are covered by defined benefit pension plans sponsored by Sirius International called Sirius Rückversicherungs Service GmbH Pension Plan. Paid pension premiums are invested with Skandia Liv for employees in Sweden and with Allianz for employees in Germany. Skanda Liv held 94% and 94% of total plan assets in 2018 and 2017, respectively. Allianz held 6% and 6% of total plan assets in 2018 and 2017, respectively. Skandia manages the portfolio to be able to pay a guaranteed amount and a favorable return over time with the goal of getting the highest possible return along with well-balanced risk. The average return for the period 2016 through 2018 was 6.4%. The investment directive is decided by the Skandia Liv board of directors. To achieve the goals the portfolio is diversified with the asset allocation shown below.

The breakdown of the investment of plan assets for the years ended December 31, 2018 and 2017 are as follows:

	2018	**2017**
International equities	11.4%	18.1%
Swedish equities	7.5%	9.8%
Swedish nominal bonds	40.3%	32.7%
Real estate	11.2%	11.3%
Private equity	10.4%	9.7%
Other	19.2%	18.4%

The assumptions used to determine Swedish benefit obligations for the years ended December 31, 2018 and 2017 are as follows:

	2018	**2017**
Discount rate	2.5%	2.5%
Increase in compensation levels rate	3.2%	3.2%
Turnover rate	3.0%	3.0%

The Swedish actuaries follow the Swedish industry DUS14 mortality rate. The discount rate used to calculate the Swedish benefit obligation was derived from the expected return of an investment in Swedish covered mortgage bonds with a duration in accordance with the duration of the pension obligation. The duration of the Swedish pension liability is approximately 20 years.

The assumptions used to determine German benefit obligations for the years ended December 31, 2018 and 2017 are as follows:

	2018	**2017**
Discount rate	1.7%	1.7%
Increase in compensation levels rate	2.0%	2.0%

The German actuaries follow the Germany industry Richttafeln 2018 G mortality rates and standard turnover values for the years ended December 31, 2018 and 2017. The discount rate used to calculate the German benefit obligation was derived from markets yields on high quality corporate bonds with durations consistent with plan obligations. The duration of the German pension liability is approximately 18 years.

The following tables present a reconciliation of the beginning and ending funded status and the net amounts recognized for the defined benefit plans for the years ended December 31, 2018 and 2017:

(Millions)	**2018**	**2017**
Change in benefit obligation		
Projected benefit obligation, beginning of year	$ 17.4	$ 14.9
Service cost	1.0	0.8
Interest cost	0.4	0.3
Actuarial losses	0.6	0.4
Benefit payments	(0.4)	(0.5)
Tax payments	(0.2)	(0.2)
Currency revaluation effect	(1.3)	1.7
Projected benefit obligation, end of year	17.5	17.4
Change in plan assets		
Fair value of plan assets, beginning of year	16.1	11.6
Employer contributions	1.2	0.9
Benefit payments	(0.3)	(0.3)
Interest income	0.8	2.5
Currency revaluation effect	(1.4)	1.4
Fair value of plan assets, end of year	16.4	16.1
Funded status at end of year[(1)]	**$ (1.1)**	**$ (1.3)**

[(1)] *At December 31, 2018, the Swedish plan had a funding status of $3.0 and the German plan had a funding status of $(4.1). At December 31, 2017, the Swedish plan had a funding status of $3.1 and the German plan had a funding status of $(4.4).*

Under the Swedish plan, a 100 basis point discount rate decrease would increase the 2019 defined benefit obligation by $2.3 million, with all other items remaining the same. Under the German plan, a 50 basis point decrease in the discount rate would increase the benefit obligation by $0.5 million, with all other items remaining the same. Conversely, a 50 basis point increase in the discount rate would decrease the benefit obligation by $0.4 million.

The accumulated benefit obligation for the years ended December 31, 2018 and 2017 was $17.5 million and $17.4 million, respectively.

The components of net periodic pension expense for the years ended December 31, 2018, 2017, and 2016 are as follows:

(Millions)	**2018**	**2017**	**2016**
Service cost	$ (1.2)	$ (0.8)	$ (0.9)
Interest cost	0.1	2.2	-
Actuarial (loss)	(0.8)	(0.3)	(0.9)
Net periodic pension expense	**$ (1.9)**	**$ 1.1**	**$ (1.8)**

The employer benefit payments/settlements for the years ended December 31, 2018 and 2017 were $0.4 million and $0.2 million, respectively. As at December 31, 2018, the projected benefit payments required for the defined pension benefits plans are as follows:

(Millions)	**December 31, 2018**
2019	$ 0.4
2020	0.4
2021	0.4
2022	0.4
2023	0.4
2024-2028	2.9
Total benefit payments required	**$ 4.9**

Defined contributions plans

Non-U.S.
In the United Kingdom, Sirius International contributes 12% of the employee's salary. Contributed funds are invested into an annuity of the employee's choice. In Belgium, Sirius International contributes 6.5%-8.5% of the employee's salary. Employees in Switzerland are eligible to participate in the industry-sponsored Swisscanto pension plan ("Swisscanto plan"). The Swisscanto plan is a combination of a defined contribution and a defined benefit plan. For the Swisscanto plan, Sirius International incurs 60%-70% of the total premium charges and the employees incur the remaining 30-40%. As of December 31, 2018 and 2017, the projected benefit obligation of Sirius International's various benefit plans was $17.5 million and $17.4 million, and the funded status was $(1.1) million and $(1.3) million, respectively. Sirius International recognized expenses related to these various plans of $7.6 million, $4.9 million, and $7.3 million in 2018, 2017, and 2016, respectively.

Sirius Bermuda sponsors defined contribution plans, which cover substantially all of the employees of Sirius Bermuda. Under these plans, Sirius Bermuda is required to contribute 10% of each participant's salary into an individual account maintained by an independent pension administrator. Employees become vested in the Sirius Bermuda contributions after two years of service. Sirius Bermuda recognized expenses of $0.5 million and $0.4 million during the years ended December 31, 2018 and 2017, respectively. In previous years, employees of Sirius Bermuda were covered by Sirius International sponsored plans and Sirius International incurred expenses of $0.5 million during the year ended December 31, 2016.

U.S.
Sirius International Holding Company, Inc. ("SIHC") sponsors a defined contribution plan (the "SIHC 401(k) Plan") which offers participants the ability to invest their balances in several different investment options. The SIHC 401(k) Plan provides qualifying employees with matching contributions of 100% up to the first 2% and 50% of the next 4% of salary (subject to U.S. federal limits on allowable contributions in a given year). Total expense for matching contributions to the plan was $0.8 million, $1.3 million, and $0.7 million in 2018, 2017, and 2016, respectively. Additionally, all participants in the SIHC 401(k) Plan can earn a variable contribution of up to 7% of their salary, subject to the applicable IRS annual covered compensation limits ($0.3 million for 2018) and contingent upon Sirius Group's performance. During 2018, there were no variable contributions to the SIHC 401(k) Plan. Total expense for variable contributions to the SIHC 401(k) Plan was $0.3 million and $0.4 million in 2017 and 2016, respectively.

IMG sponsors a 401(k) retirement savings plan (the "IMG 401(k) Plan"). IMG 401(k) Plan participants may elect to have a percentage of their salaries contributed to the IMG 401(k) Plan on a pre-tax basis subject to annual limits prescribed under the Internal Revenue Code. IMG makes safe harbor matching contributions to the IMG 401(k) Plan equal to 100% of participants' deferrals up to the first 1% of eligible compensation and 50% of participants' deferrals between 1% and 6% of eligible compensation. IMG may also elect to make discretionary contributions to the IMG 401(k) Plan which are allocated based on compensation. IMG made matching contributions to the IMG 401(k) Plan of $0.6 million during 2018 and $0.3 million from the date of acquisition to December 31, 2017.

Armada maintains a qualified 401(k) plan (the "Armada 401(k) Plan"). Under provisions of the Armada 401(k) Plan, Armada may make discretionary, matching contributions. Matching contributions into the Armada 401(k) Plan totaled $0.2 million during 2018 and $0.1 million from the date of acquisition to December 31, 2017.

Note 15. Common shareholders' equity and non-controlling interests

Common shareholder's equity

At December 31, 2018, the Company is an indirect wholly-owned subsidiary of Sirius Ltd. through S.I. Holdings, Ltd., both exempted Bermuda limited liability companies.

Additional paid-in surplus

The following table shows the change in Additional paid-in surplus for the years ended December 31, 2018, 2017, and 2016:

(Millions)		**Total**
Additional paid-in surplus as of December 31, 2015	**$**	**1,341.8**
Capital contributions from parent		20.0
Excess of fair value received over equity method carrying value of OneBeacon (See **Note 17**)		22.1
Other, net		0.1
Additional paid-in surplus as of December 31, 2016	**$**	**1,384.0**
Capital contributions from parent		82.7
Contribution of the common shares of SAHC2 (See **Note 2**)		193.1
Redemption of preference shares (See **Note 2**)		(250.0)
Other, net		(0.1)
Additional paid-in surplus as of December 31, 2017	**$**	**1,409.7**
Capital contributions from parent		115.0
Other, net		0.1
Additional paid-in surplus as of December 31, 2018	**$**	**1,524.8**

Dividends

The Company paid common dividends of $150.0 million in cash and investments during 2018. The Company paid common dividends of $110.0 million in cash and investments during 2017. In 2016, the Company paid common dividends of $20.0 million in cash and investments.

Non-controlling interests

Non-controlling interests consist of the ownership interests of non-controlling shareholders in consolidated entities and are presented separately on the balance sheet. At December 31, 2018 and 2017, Sirius Group's balance sheet included $1.7 million and $0.2 million, respectively, in non-controlling interests.

The following table shows the change in non-controlling interest for the years ended December 31, 2018, 2017, and 2016:

(Millions)		**Total**
Non-controlling interests as of December 31, 2015	**$**	**0.1**
Net income attributable to non-controlling interests		0.5
Other, net		0.7
Non-controlling interests as of December 31, 2016	**$**	**1.3**
Net income attributable to non-controlling interests		(0.4)
Other, net		(0.7)
Non-controlling interests as of December 31, 2017	**$**	**0.2**
Net income attributable to non-controlling interests		1.4
Other, net		0.1
Non-controlling interests as of December 31, 2018	**$**	**1.7**

Alstead Re

As of December 31, 2018 and 2017, Sirius Group recorded non-controlling interest of $1.7 million and $0.2 million, respectively, in Alstead Re Insurance Company ("Alstead Re"). (See **Note 18**.)

Note 16. Statutory capital and surplus

Sirius Group's insurance and reinsurance operations are subject to regulation and supervision in each of the jurisdictions where they are domiciled and licensed to conduct business. Generally, regulatory authorities have broad supervisory and administrative powers over such matters as licenses, standards of solvency, premium rates, policy forms, investments, security deposits, methods of accounting, form and content of financial statements, reserves for unpaid loss and LAE, reinsurance, minimum capital and surplus requirements, dividends and other distributions to shareholders, periodic examinations, and annual and other report filings. In general, such regulation is for the protection of policyholders rather than shareholders.

Non-U.S.

The Insurance Act 1978 of Bermuda and related regulations, as amended ("Insurance Act"), regulates the insurance business of Bermuda-domiciled insurers and reinsurers. The Insurance Act imposes solvency and liquidity standards on Bermuda insurance companies, as well as auditing and reporting requirements. The Bermuda Monetary Authority ("BMA"), a Solvency II-equivalent regulatory regime, has confirmed that it will act as the primary group supervisor effective July 1, 2016 and has designated Sirius Bermuda as the designated insurer. Therefore, Sirius Group is subject to the BMA's group supervision and solvency rules. Under the Insurance Act, insurers and reinsurers are required to maintain minimum statutory capital and surplus at a level equal to the greater of a minimum solvency margin ("MSM") and the Enhanced Capital Requirement ("ECR") which is established by reference to either a Bermuda Solvency Capital Requirement ("BSCR") model or an approved internal capital model. The BSCR model is a risk-based capital model that provides a method for determining an insurer's minimum required capital taking into account the risk characteristics of different aspects of the company's business. As of December 31, 2018, the eligible capital for Sirius Group exceeded the required capital as measured by the BSCR model.

Management has also evaluated the group and principal operating subsidiaries' ability to maintain adequate levels of statutory capital, liquidity, and rating agency capital and believes they will be able to do so. In performing this analysis, management has considered the most recent statutory capital position of each of the principal operating subsidiaries as well as the group overall, through its holding companies as a result of BMA group regulation. In addition, management has evaluated the ability of the holding companies to allocate capital and liquidity around the group as and when needed.

Sirius Group has two Bermuda based insurance subsidiaries: Sirius Bermuda, a Class 4 insurer, and Alstead Re, a Class 3A insurer. Each of these Bermuda insurance subsidiaries are registered under the Insurance Act and are subject to regulation and supervision of the BMA. The BSCR for Sirius Bermuda and Alstead Re as at December 31, 2018 was $837 million and $3 million, respectively. The BSCR for Sirius Bermuda and Alstead Re as at December 31, 2017 was $902 million and $3 million, respectively. Actual statutory capital and surplus of the Bermuda based insurance subsidiaries as at December 31, 2018 was $2.2 billion. In addition, the Bermuda based insurance subsidiaries are required to maintain a minimum liquidity ratio. As of December 31, 2018, all liquidity ratio requirements were met.

Sirius International is subject to regulation and supervision by the Swedish Financial Supervisory Authority ("SFSA"). Sirius International's total regulatory capital as of December 31, 2018 was $1.7 billion. In accordance with SFSA regulations, Sirius International holds restricted equity of $1.3 billion as a component of Swedish regulatory capital. This restricted equity cannot be paid as dividends. Under Solvency II, the SFSA also acts as the European Economic Area group supervisor, with Sirius International UK Holding Ltd. ("SIUK") serving as the highest European entity subject to the SFSA's group supervision. Solvency II regulation in Europe gives the SFSA the option to waive European-level group supervision if certain legal requirements are met. As of December 31, 2018, the SFSA has not exercised this option.

The financial services industry in the United Kingdom is dual-regulated by the Financial Conduct Authority and the Prudential Regulation Authority (collectively, the "U.K. Regulators"). The U.K. Regulators regulate insurers, insurance intermediaries and Lloyd's. The U.K. Regulators and Lloyd's have common objectives in ensuring that the Lloyd's market is appropriately regulated. Lloyd's is required to implement certain rules prescribed by the U.K. Regulators by the powers it has under the Lloyd's Act of 1982 relating to the operation of the Lloyd's market. In addition, each year the U.K. Regulators require Lloyd's to satisfy an annual solvency test that measures whether Lloyd's has sufficient assets in the aggregate to meet all the outstanding liabilities of its members.

Lloyd's permits its corporate and individual members ("Members") to underwrite insurance risks through Lloyd's syndicates. Members of Lloyd's may participate in a syndicate for one or more underwriting years by providing capital to support the syndicate's underwriting. All syndicates are managed by Lloyd's approved managing agents. Managing agents receive fees and profit commissions in respect of the underwriting and administrative services they provide to the syndicates. Lloyd's prescribes, in respect of its managing agents and Members, certain minimum standards relating to their management and control, solvency and various other requirements.

Sirius Group participates in the Lloyd's market through the 100% ownership of Sirius International Corporate Member Ltd., a Lloyd's corporate member, which in turn provides underwriting capacity to Syndicate 1945. Sirius Group has its own Lloyd's managing agent, Sirius International Managing Agency, which manages Syndicate 1945. Lloyd's approved net capacity for 2019 is £80.8 million, or approximately $103.0 million (based on the December 31, 2018 GBP to USD exchange rate). Stamp capacity is a measure of the amount of net premium (premiums written less acquisition costs) that a syndicate is authorized by Lloyd's to write.

U.S.
Sirius America and the insurance subsidiaries of Sirius Global Solutions are subject to regulation and supervision by the National Association of Insurance Commissioners (“NAIC”) and the department of insurance in the state of domicile. The NAIC uses risk-based capital (“RBC”) standards for U.S. property and casualty insurers as a means of monitoring certain aspects affecting the overall financial condition of insurance companies. As of December 31, 2017, the available capital of Sirius Group’s U.S. insurance and reinsurance operating subsidiaries exceeded their respective RBC requirements.

Sirius America’s policyholders’ surplus, as reported to regulatory authorities as of December 31, 2018 and 2017, was $522.2 million and $521.8 million. Sirius America’s statutory net (loss) income for the years ended December 31, 2018, 2017, and 2016 was $(9.9) million, $(6.4) million, and $82.7 million, respectively. The principal differences between Sirius America’s statutory amounts and the amounts reported in accordance with GAAP include deferred acquisition costs, deferred taxes, gains recognized under retroactive reinsurance contracts, and market value adjustments for debt securities. The minimum policyholders’ surplus necessary to satisfy Sirius America’s regulatory requirements was $93.4 million as of December 31, 2018, which equals the authorized control level of the NAIC risk-based capital based on Sirius America’s policyholders’ surplus.

Oakwood Insurance Company (“Oakwood”) policyholders’ surplus, as reported to regulatory authorities as of December 31, 2018 and 2017 was $40.5 million and $41.4 million, respectively. Oakwood’s statutory net (loss) income for the years ended December 31, 2018, 2017, and 2016 was $(1.1) million, $0.5 million and $(12.0) million, respectively. The minimum policyholders’ surplus necessary to satisfy Oakwood’s regulatory requirements was $5.0 million as of December 31, 2018, which equals the authorized control level of the NAIC risk-based capital based on Oakwood’s policyholders’ surplus. During 2017, Mount Beacon was merged into Oakwood.

Empire Insurance Company (“Empire”) policyholders' surplus, as reported to regulatory authorities as of December 31, 2018 and 2017 was $10.7 million and $10.5 million, respectively. Empire’s statutory net income (loss) for the years ended December 31, 2018, 2017, and 2016 was $0.1 million, $(0.3) million and $0.0 million, respectively. The minimum policyholders' surplus necessary to satisfy Empire’s regulatory requirements was $8.8 million as of December 31, 2018, and the NAIC risk-based capital authorized control level was $1.0 million.

WRM America policyholders' surplus, as reported to regulatory authorities as of December 31, 2018 was $13.9 million. WRM America’s statutory net (loss) for the year ended December 31, 2018 was $(0.6) million. The minimum policyholders' surplus necessary to satisfy WRM America’s regulatory requirements was $9.8 million as of December 31, 2018, and the NAIC risk-based capital authorized control level was $0.1 million.

Dividend Capacity

Sirius Group's top tier regulated insurance and reinsurance operating subsidiary is Sirius Bermuda. Sirius Bermuda’s ability to pay dividends is limited under Bermuda law and regulations. Under the Insurance Act, Sirius Bermuda is restricted with respect to the payment of dividends. Sirius Bermuda is prohibited from declaring or paying in any financial year dividends of more than 25% of its total statutory capital and surplus (as shown on its previous financial year’s statutory balance sheet) unless it files, at least seven days before payment of such dividends, with the BMA an affidavit stating that it will continue to meet the required margins following the declaration of those dividends. Sirius Bermuda could pay approximately $539.3 million to its parent company, Sirius International Group, Ltd., during 2019. Sirius Bermuda indirectly owns Sirius International Insurance Corporation, Sirius America Insurance Company and Sirius Group's other insurance and reinsurance operating companies, each of which are limited in their ability to pay dividends by the insurance laws of their relevant jurisdictions.

Sirius International has the ability to pay dividends up to Sirius Bermuda subject to the availability of unrestricted equity, calculated in accordance with the Swedish Act on Annual Accounts in Insurance Companies and the FSA. Unrestricted equity is calculated on a consolidated group account basis and on a parent account basis. Differences between the two include but are not limited to accounting for goodwill, subsidiaries (with parent accounts stated at original foreign exchange rates), taxes and pensions. Sirius International’s ability to pay dividends is limited to the “lower of” unrestricted equity as calculated within the group and parent accounts. As of December 31, 2018, Sirius International had $373.4 million (based on the December 31, 2018 SEK to USD exchange rate) of unrestricted equity on a parent account basis (the lower of the two approaches) available to pay dividends in 2019. The amount of dividends available to be paid by Sirius International in any given year is also subject to cash flow and earnings generated by Sirius International’s business, the maintenance of adequate solvency capital ratios for Sirius International and the consolidated SIUK group, as well as to dividends received from its subsidiaries, including Sirius America. Earnings generated by Sirius International’s business that are allocated to the Safety Reserve are not available to pay dividends (see “**Safety Reserve**” below). During 2018, Sirius International did not declare a dividend and paid $20.3 million of dividends declared in 2017.

Under the normal course of business, Sirius America has the ability to pay dividends to its immediate parent during any twelve-month period without the prior approval of regulatory authorities in an amount set by a formula based on the lesser of net investment income, as defined by statute, or 10% of statutory surplus, in both cases as most recently reported to regulatory authorities, subject to the availability of earned surplus and subject to dividends paid in prior periods. Based on this formula, Sirius America does not have any dividend capacity as of December 31, 2018, without prior regulatory approval. As of December 31, 2018, Sirius America had $522.2 million of statutory surplus and $108.4 million of earned surplus. During 2018, Sirius America did not pay any dividends to its immediate parent.

As of December 31, 2018, Sirius Group had $15.5 million of net unrestricted cash, short-term investments, and fixed maturity investments outside of its regulated and unregulated insurance and reinsurance operating subsidiaries.

Capital Maintenance

There is a capital maintenance agreement between Sirius International and Sirius America, which obligates Sirius International to make contributions to Sirius America's surplus in order for Sirius America to maintain surplus equal to at least 125% of the company action level risk-based capital as defined in the National Association of Insurance Commissioners' Property/Casualty Risk-Based Capital Report. The agreement provides for a maximum contribution to Sirius America of $200 million. During 2018, Sirius International did not make any contributions to the surplus of Sirius America. In 2017, Sirius International provided Sirius America with an accident year stop-loss cover, with an attachment point in excess of 83% and a limit of $27 million. This accident year stop-loss reinsurance was not renewed in 2018. In addition, at November 1, 2016, Sirius America and Sirius International entered into a quota share agreement whereby Sirius America ceded Sirius International 75% of its reinsurance business on an accident year basis. This quota share agreement was in force through March 31, 2018. For the year ended December 31, 2018 and 2017, Sirius America ceded $9 million and $115 million, respectively, of premiums earned to Sirius International under this quota share agreement. In the third quarter of 2018, Sirius America entered into a commutation agreement with Sirius International and commuted all outstanding balances related to the accident year stop-loss and the 75% quota share.

Safety Reserve

Subject to certain limitations under Swedish law, Sirius International is permitted to transfer pre-tax income amounts into an untaxed reserve referred to as a Safety Reserve. As of December 31, 2018, Sirius International’s Safety Reserve amounted to SEK 10.7 billion, or $1.2 billion (based on the December 31, 2018 SEK to USD exchange rate). Under GAAP, an amount equal to the Safety Reserve, net of a related deferred tax liability established at the Swedish tax rate of 22%, is classified as shareholder’s equity. Generally, this deferred tax liability is only required to be paid by Sirius International if it fails to maintain prescribed levels of premium writings and loss reserves in future years. As a result of the indefinite deferral of these taxes, Swedish regulatory authorities apply no taxes to the Safety Reserve when calculating solvency capital under Swedish insurance regulations. Accordingly, under local statutory requirements, an amount equal to the deferred tax liability on Sirius International’s Safety Reserve ($261.1 million as of December 31, 2018) is included in solvency capital. Access to the Safety Reserve is restricted to coverage of insurance and reinsurance losses. Access for any other purpose requires the approval of Swedish regulatory authorities. Similar to the approach taken by Swedish regulatory authorities, most major rating agencies generally include the $1.2 billion balance of the Safety Reserve, without any provision for deferred taxes, in Sirius International’s regulatory capital when assessing Sirius International and Sirius Group’s financial strength. Subject to certain limitations under Swedish law, Sirius International is permitted to transfer certain portions of its pre-tax income to its Swedish parent companies to minimize taxes (referred to as a group contribution). During 2018, Sirius International did not transfer any of its 2017 pre-tax income via group contributions to its Swedish parent companies.

Note 17. Investments in unconsolidated entities

Sirius Group’s investments in unconsolidated entities are included within Other long-term investments and consist of investments in common equity securities or similar instruments, which give Sirius Group the ability to exert significant influence over the investee’s operating and financial policies (“equity method eligible unconsolidated entities”). Such investments may be accounted for under either the equity method or, alternatively, Sirius Group may elect to account for them under the fair value option.

The following table presents the components of Other long-term investments as of December 31, 2018 and 2017:

(Millions)	**2018**	**2017**
Equity method eligible unconsolidated entities, at fair value	$ 169.4	$ 121.2
Other unconsolidated investments, at fair value[1]	195.6	148.3
Total Other long-term investments[2]	**$ 365.0**	**$ 269.5**

[1]*Includes Other long-term investments that are not equity method eligible.*
[2]*There were no investments accounted for using the equity method as of December 31, 2018 and 2017.*

Equity method eligible unconsolidated entities, at fair value

Sirius Group has elected the Fair Value Option to account for its equity method eligible investments accounted for as part of Other long-term investments for consistency of presentation with rest of its investment portfolio. The following table presents Sirius Group's investments in equity method eligible unconsolidated entities as of December 31, 2018 and 2017 with ownership interest greater than 20%:

	Ownership interest at December 31,		
Investee	**2018**	**2017**	**Instrument Held**
BE Reinsurance Limited	25.0%	25.0%	Common shares
BioVentures Investors (Offshore) IV LP	73.0%	73.0%	Units
Camden Partners Strategic Fund V (Cayman), LP	36.4%	36.5%	Units
NEC Cypress Buyer LLC[(1)]	13.3%	23.5%	Units
New Energy Capital Infrastructure Credit Fund LP	22.9%	23.3%	Units
New Energy Capital Infrastructure Offshore Credit Fund LP	54.9%	56.2%	Units
Scion G7, LP	28.8%	N/A	Units
Tuckerman Capital V LP	47.6%	48.3%	Units
Tuckerman Capital V Co-Investment I LP	47.7%	49.5%	Units

[(1)]*The ownership percentage of NEC Cypress Buyer LLC was greater than 20% at December 31, 2017 but was less than 20% at December 31, 2018 and is included in the table for comparative purposes.*

The following tables present aggregated summarized financial information for Sirius Group's investments in equity method eligible unconsolidated entities:

	As of December 31,	
(Millions)	**2018**	**2017**
Balance sheet data:		
Total assets	$ 503.5	$ 336.7
Total liabilities	$ 71.6	$ 31.2

	For the years ended December 31,		
(Millions)	**2018**	**2017**	**2016**
Income statement data:			
Revenues	$ 42.8	$ 38.1	$ 21.6
Expenses	$ (14.9)	$ (12.2)	$ (14.1)

Equity method eligible affiliates, accounted for using the equity method

OneBeacon

On April 18, 2016, Sirius Group sold its investment in OneBeacon at fair value to its former parent for proceeds of $178.3 million in connection with the sale of Sirius Group to CMIG International and recorded $22.1 million of additional paid-in surplus for the excess of fair value over the equity method carrying value of OneBeacon. (See **Note 3**.)

The following table summarizes amounts recorded by Sirius Group under the equity method relating to its investment in OneBeacon for the period January 1, 2016 until April 18, 2016:

(Millions)		**Total**
Equity method carrying value of investment in OneBeacon as of December 31, 2015	$	151.9
Equity in earnings of OneBeacon		6.6
Dividends received		(3.0)
Other, net		0.7
Proceeds received for the sale of OneBeacon		(178.3)
Excess of fair value received over equity method carrying value of OneBeacon		22.1
Equity method carrying value of investment in OneBeacon as of April 18, 2016	$	-

The following table presents financial information for OneBeacon as of March 31, 2016:

(*Millions*)		**March 31, 2016**
OneBeacon balance sheet data:		
Total investments	$	2,562.1
Total assets		3,529.0
Unpaid loss and loss adjustment expense reserves		1,343.8
Long-term debt		272.9
Total liabilities		2,509.2
Total non-controlling interests		3.2
Common shareholders' equity		1,016.6

The following table presents financial information for OneBeacon for the three months ended March 31, 2016:

(*Millions*)		**Three months ended March 31, 2016**
OneBeacon income statement data:		
Net premiums earned	$	278.6
Net investment income		14.4
Total revenues		310.5
Loss and loss adjustment expenses		158.8
Total expenses		272.3
Net income		46.4

Note 18. Variable interest entities

Sirius Group consolidates the results of operations and financial position of every voting interest entity ("VOE") in which it has a controlling financial interest and VIEs in which it is considered to be the primary beneficiary. The consolidation assessment, including the determination as to whether an entity qualifies as a VOE or VIE, depends on the facts and circumstances surrounding each entity.

Sirius Group has determined that Alstead Re is a VIE for which Sirius Group is the primary beneficiary and is required to consolidate it. The following table presents Alstead Re's assets and liabilities, as classified in the Consolidated Balance Sheets as at December 31, 2018 and 2017:

(*Millions*)	2018	2017
Assets:		
Fixed maturity investments	$ 4.0	$ -
Short-term investments	0.3	-
Cash	0.2	4.5
Total investments	4.5	4.5
Accrued investment income	0.1	-
Insurance and reinsurance premiums receivable	3.7	4.1
Funds held by ceding companies	5.2	2.7
Deferred acquisition costs	0.9	1.3
Total assets	**$ 14.4**	**$ 12.6**
Liabilities		
Loss and loss adjustment expense reserves	$ 4.6	$ 3.5
Unearned insurance and reinsurance premiums	3.7	4.3
Total liabilities	**$ 8.3**	**$ 7.8**

Sirius Group is a passive investor in certain third-party-managed hedge and private equity funds, some of which are VIEs. Sirius Group is not involved in the design or establishment of these VIEs, nor does it actively participate in the management of the VIEs. The exposure to loss from these investments is limited to the carrying value of the investments at the balance sheet date.

Sirius Group calculates maximum exposure to loss to be (i) the amount invested in the debt or equity of the VIE, (ii) the notional amount of VIE assets or liabilities where Sirius Group has also provided credit protection to the VIE with the VIE as the referenced obligation, and (iii) other commitments and guarantees to the VIE. Sirius Group does not have any VIEs that it sponsors nor any VIEs where it has recourse to it or has provided a guarantee to the VIE interest holders.

The following table presents total assets of unconsolidated VIEs in which Sirius Group holds a variable interest, as well as the maximum exposure to loss associated with these VIEs:

		Maximum Exposure to Loss		
(*Millions*)	Total VIE Assets	On-Balance Sheet	Off-Balance Sheet	Total
December 31, 2018				
Other long-term investments[(1)]	$ 209.1	$ 103.1	$ 32.0	$ 135.1
Total at December 31, 2018	**$ 209.1**	**$ 103.1**	**$ 32.0**	**$ 135.1**
December 31, 2017				
Other long-term investments[(1)]	$ 1,378.1	$ 108.2	$ 57.4	$ 165.6
Total at December 31, 2017	**$ 1,378.1**	**$ 108.2**	**$ 57.4**	**$ 165.6**

[(1)] *Comprised primarily of hedge funds and private equity funds.*

Note 19. Transactions with related parties

(Re)insurance contracts

In the normal course of business, Sirius Group enters into insurance and reinsurance contracts with certain of its insurance and MGU affiliates, or their subsidiaries. During the year ended December 31, 2018 and 2017, these contracts with related parties resulted in gross written premiums of $67.9 million and $3.5 million, respectively. During the year ended December 31, 2016, Sirius Group did not have any contracts with related parties that resulted in any gross written premiums. As at December 31, 2018 and 2017, Sirius Group had total receivables due from related parties of $14.3 million and $10.4 million, respectively. At December 31, 2018, Sirius Group did not have any payables due to related parties. At December 31, 2017, Sirius Group had total payables due to related parties of $0.5 million.

White Mountains Advisors

White Mountains Advisors ("WMA"), an indirect wholly-owned subsidiary of Sirius Group's former parent, provided investment advisory and management services to Sirius Group and its subsidiaries under an Investment Advisory Services Agreement. During 2016, Sirius Group terminated this agreement. Sirius Group incurred $3.1 million of investment fees during 2016.

Note 20. Commitments and contingencies

Concentrations of credit risk

Sirius Group underwrites a significant amount of its reinsurance business through reinsurance intermediaries that represent the ceding company. There is credit risk associated with payments of (re)insurance balances to Sirius Group in regards to these brokers' ability to fulfill their contractual obligations. These intermediaries are fairly large and well established, and there are no indications they are financially distressed.

During the years ended December 31, 2018, 2017, and 2016, Sirius Group received its gross reinsurance premiums written from three major, third-party reinsurance intermediaries as detailed in the following table:

Gross written premium by intermediary	2018	2017	2016
AON Corporation and subsidiaries	26%	22%	22%
Guy Carpenter & Company and subsidiaries	18%	18%	18%
WT Butler and Co. Ltd.	10%	10%	8%
Total	**54%**	**50%**	**48%**

Geographic Concentration

The following table shows Sirius Group's net written premiums by geographic region based on the location of the ceding company for the years ended December 31, 2018, 2017, and 2016:

(Millions)	2018	2017	2016
United States	$ 794.7	$ 563.1	$ 463.0
Europe	276.5	262.3	258.9
Canada, the Caribbean, Bermuda and Latin America	103.6	111.4	88.3
Asia and Other	182.3	153.4	127.9
Total	**$ 1,357.1**	**$ 1,090.2**	**$ 938.1**

Sirius Group conducts a significant portion of its business outside of the United States. As a result, a significant portion of Sirius Group's assets, liabilities, revenues, and expenses are denominated in currencies other than the U.S. dollar and are therefore subject to foreign currency risk. Sirius Group's foreign currency risk cannot be eliminated entirely and significant changes in foreign exchange rates may adversely affect Sirius Group's results of operations and financial condition.

Sirius Group's foreign operations are subject to legal, political, and operational risks that may be greater than those present in the United States. As a result, certain of Sirius Group's operations at these foreign locations could be temporarily or permanently disrupted.

Lloyd's Central Fund

The Lloyd's Central Fund is available to satisfy claims if a member of Lloyd's is unable to meet its obligations to policyholders. Sirius Group has an obligation to pay contributions to the Lloyd's Central Fund each year based on gross written premium. For 2019, Sirius Group estimates the Lloyd's Central Fund contributions to be $0.6 million (based on the December 31, 2018 GBP to USD exchange rate) which is 0.35% of gross written premium. The Council of Lloyd's have the power to levy an additional contribution on members if it considered necessary, and the maximum additional contribution is currently 3% of capacity.

Leases

Sirius Group leases certain office space under non-cancellable operating leases that expire on various dates. The future annual minimum rental payments required under non-cancellable leases for office space are as follows:

(Millions)	Future Payments
2019	$ 10.4
2020	9.2
2021	7.6
2022	6.8
2023 and after	6.1
Total	**$ 40.1**

Total rental expense for the years ended December 31, 2018, 2017, and 2016 was $11.7 million, $10.2 million, and $6.2 million, respectively. Sirius Group also has various other lease obligations, which are not significant in the aggregate.

Legal Proceedings

Sirius Group, and the insurance and reinsurance industry in general, are routinely subject to claims related litigation and arbitration in the normal course of business, as well as litigation and arbitration that do not arise from, or are directly related to, claims activity. Sirius Group estimates of the costs of settling matters routinely encountered in claims activity are reflected in the reserves for unpaid loss and LAE. (See **Note 5**.)

Sirius Group considers the requirements of ASC 450, *Contingencies* (“ASC 450”), when evaluating its exposure to non-claims related litigation and arbitration. ASC 450 requires that accruals be established for litigation and arbitration if it is probable that a loss has been incurred and it can be reasonably estimated. ASC 450 also requires that litigation and arbitration be disclosed if it is probable that a loss has been incurred or it there is a reasonable possibility that a loss may have been incurred.

Note 21. Subsequent events

Subsequent Events (ASC 855) established general standards for accounting and disclosures of events occurring subsequent to the balance sheet date but prior to issuance of financial statements. The Company has evaluated subsequent events through April 30, 2019, the date on which the Consolidated Financial Statements were issued.