MARKEL BERMUDA LIMITED

Consolidated Financial Statements

December 31, 2018 and 2017

KPMG Audit Limited
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INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of
Markel Bermuda Limited

We have audited the accompanying consolidated financial statements of Markel Bermuda Limited and its subsidiary, which comprise the consolidated balance sheets as of December 31, 2018 and 2017, and the related consolidated statements of loss and comprehensive (loss) income, changes in shareholder's equity, and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles; 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.

Auditor's Responsibility

Our responsibility is to express an opinion on these 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 the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity'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 Markel Bermuda Limited and its subsidiariy as of December 31, 2018 and 2017, and the results of their operations and their cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

Emphasis of Matter

As discussed in Note 2 to the consolidated financial statements, on January 1, 2018, the Company adopted new accounting guidance ASU No. 2016-01, Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. Our opinion is not modified with respect to this matter.

Other Matter

Management has omitted certain disclosures related to short-duration contracts that U.S. generally accepted accounting principles require to be presented to supplement the basic consolidated financial statements. Such missing information, although not a part of the basic consolidated financial statements, is required by the Financial Accounting Standards Board who consider it to be an essential part of financial reporting for placing the basic consolidated financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic consolidated financial statements is not affected by this missing information.

KPMG Audit Limited

Chartered Professional Accountants
Hamilton, Bermuda
April 26, 2019

MARKEL BERMUDA LIMITED
CONSOLIDATED BALANCE SHEETS

	December 31, 2018	December 31, 2017
	(dollars in thousands)	
ASSETS		
Investments, at estimated fair value:		
Fixed maturities, available-for-sale (amortized cost of $2,263,305 in 2018 and $2,300,001 in 2017)	$ 2,471,815	$ 2,607,902
Equity securities, available-for-sale (cost of $1,009,254 in 2017)	—	1,435,071
Equity securities (cost of $1,213,933 in 2018)	1,547,597	—
Investments in affiliates, at fair value	47,268	125,312
Investment in affiliate, at cost	—	147,023
Short-term investments (estimated fair value approximates cost)	141,988	223,903
Other investments	740	898
Total Investments	4,209,408	4,540,109
Cash and cash equivalents	249,870	303,970
Restricted cash and cash equivalents	187,358	121,747
Premiums receivable	719,674	735,896
Reinsurance recoverable on unpaid losses	846,585	795,791
Reinsurance recoverable on paid losses	21,834	42,704
Deferred policy acquisition costs	111,520	153,236
Prepaid reinsurance premiums	53,793	63,222
Accrued interest income	34,470	36,473
Due from affiliates, net	493,617	425,289
Deferred tax asset	14,641	—
Current income tax recoverables	18,591	58,838
Other assets	24,705	24,649
Total Assets	$ 6,986,066	$ 7,301,924
LIABILITIES		
Property and casualty losses	$ 3,691,655	$ 3,401,893
Life and annuity benefits	1,012,816	1,096,478
Deposit liabilities	41,148	43,760
Funds withheld from reinsurers	19,414	20,522
Unearned property and casualty premiums	549,277	665,740
Reinsurance balances payable	67,240	95,048
Notes payable to affiliates	74,875	142,500
Deferred tax liability	—	11,335
Accounts payable and accrued expenses	34,078	45,261
Total Liabilities	5,490,503	5,522,537
SHAREHOLDER'S EQUITY		
Common shares (par value $1.00 per share); 58,829,354 shares issued and outstanding	58,829	58,829
Additional paid-in capital	1,157,948	1,157,948
Accumulated other comprehensive income	93,969	476,075
Retained earnings	184,817	86,535
Total Shareholder's Equity	1,495,563	1,779,387
Total Liabilities and Shareholder's Equity	$ 6,986,066	$ 7,301,924

See accompanying notes to consolidated financial statements.

MARKEL BERMUDA LIMITED
CONSOLIDATED STATEMENTS OF LOSS AND COMPREHENSIVE (LOSS) INCOME

	Years Ended December 31,	
	2018	2017
	(dollars in thousands)	
REVENUES		
Gross premiums written	$ 1,206,583	$ 1,315,485
Ceded premiums written	(194,691)	(187,729)
Net premiums written	1,011,892	1,127,756
Gross earned premiums	1,314,642	1,253,805
Ceded earned premiums	(202,262)	(203,736)
Net earned premiums	1,112,380	1,050,069
Net investment income	124,436	121,260
Net investment losses:		
Other-than-temporary impairment losses	—	(4,520)
Net realized investment gains, excluding other-than-temporary impairment losses	1,445	27,661
Change in fair value of equity securities	(145,505)	(54,707)
Net investment losses	(144,060)	(31,566)
Other income	1,660	2,022
Total Revenues	1,094,416	1,141,785
LOSSES AND EXPENSES		
Net losses and loss adjustment expenses	844,873	862,186
Claims and policy benefits	34,597	36,980
Acquisition costs	332,216	302,247
General and administrative expenses	59,933	55,949
Foreign exchange gains	(27,895)	(337)
Interest expense	1,634	278
Total Losses and Expenses	1,245,358	1,257,303
Loss Before Income Taxes	(150,942)	(115,518)
Income tax benefit	(19,531)	(37,448)
Net Loss	$ (131,411)	$ (78,070)
OTHER COMPREHENSIVE (LOSS) INCOME		
Change in net unrealized gains on investments, net of taxes:		
Net holding (losses) gains arising during the period (tax impact: 2018 - $20,914; 2017 - $(108,498))	$ (78,676)	$ 203,805
Reclassification adjustments for net losses included in net income (tax impact: 2018 - $43; 2017 - $6,226)	(162)	(11,562)
Change in net unrealized gains on investments, net of taxes	(78,838)	192,243
Impact of net unrealized losses on life and annuity losses (benefits), net of taxes (tax impact: 2018 - $(5,051); 2017 - $2,915)	19,001	(5,414)
Change in foreign currency translation adjustment, net of taxes (tax impact: 2017 - $(527))	—	979
Total Other Comprehensive (Loss) Income	$ (59,837)	$ 187,808
Comprehensive (Loss) Income	$ (191,248)	$ 109,738

See accompanying notes to consolidated financial statements.

MARKEL BERMUDA LIMITED
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDER'S EQUITY

	Years Ended December 31,	
	2018	2017
	(dollars in thousands)	
COMMON SHARES		
Balance - Beginning And End Of Year	$ 58,829	$ 58,829
ADDITIONAL PAID-IN CAPITAL		
Balance - beginning of year	1,157,948	1,347,948
Return of capital	—	(190,000)
Balance - End Of Year	1,157,948	1,157,948
ACCUMULATED OTHER COMPREHENSIVE INCOME		
Unrealized holding gains:		
Balance - beginning of year	507,762	320,933
Cumulative effect of adoption of ASU No. 2016-01, net of taxes	(336,395)	—
Cumulative effect of adoption of ASU No. 2018-02	11,485	—
Holding (losses) gains on available for sale securities arising in year, net of tax	(78,676)	203,805
Net realized losses on available for sale securities included in net loss, net of tax	(162)	(11,562)
Impact of net unrealized investment losses (gains) on life and annuity benefits, net of tax	19,001	(5,414)
Balance - End Of Year	123,015	507,762
Cumulative Foreign Currency Translation Adjustment:		
Balance - beginning of year	(31,687)	(32,666)
Cumulative effect of adoption of ASU No. 2016-01, net of taxes	2,641	—
Foreign currency translation adjustment, net of tax	—	979
Balance - End Of Year	(29,046)	(31,687)
Total Accumulated Other Comprehensive Income - End Of Year	93,969	476,075
RETAINED EARNINGS		
Balance - beginning of year	86,535	494,605
Cumulative effect of adoption of ASU No. 2016-01, net of taxes	333,754	—
Cumulative effect of adoption of ASU No. 2018-02	(11,485)	—
Net loss	(131,411)	(78,070)
Dividends	(92,576)	(330,000)
Balance - End Of Year	184,817	86,535
TOTAL SHAREHOLDER'S EQUITY	$ 1,495,563	$ 1,779,387

See accompanying notes to consolidated financial statements.

MARKEL BERMUDA LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,	
	2018	2017
	(dollars in thousands)	
OPERATING ACTIVITIES		
Net loss	$ (131,411)	$ (78,070)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Net amortization of premium on fixed maturities	2,279	7,405
Net investment losses	144,060	31,566
Accretion of deposit liabilities	1,343	996
Foreign exchange gains	(27,895)	(337)
Deferred tax (benefit) expense	(6,946)	17,836
Changes in:		
Accrued interest income	2,003	5,603
Premiums receivable	16,222	(227,625)
Reinsurance recoverable on unpaid and paid losses	(29,924)	(143,848)
Deferred acquisition costs	41,716	(18,967)
Prepaid reinsurance premiums	9,429	15,927
Other assets	39,209	(66,811)
Property and casualty losses	289,762	457,052
Life and annuity benefits	(42,723)	(46,097)
Funds withheld from reinsurers	(1,108)	(2,355)
Unearned property and casualty premiums	(116,463)	66,536
Reinsurance balances payable	(27,808)	(8,255)
Accounts payable and accrued expenses	(11,183)	(10,208)
Due from affiliates	(8,333)	12,658
Other	(14,974)	337
Net Cash Provided By Operating Activities	127,255	13,343
INVESTING ACTIVITIES		
Purchases of fixed maturities and equity securities, available for sale	(383,561)	(260,902)
Sales of fixed maturities and equity securities, available for sale	179,904	177,366
Redemptions of fixed maturities, available for sale	131,425	340,089
Net change in short term investments	82,843	(54,717)
Sales and redemptions of other investments	1,397	54,448
Proceeds from redemption of investments in affiliates	29,225	—
Cost of subscriptions to investments in affiliates	(25,000)	(50,000)
Due from affiliates	(60,000)	(80,000)
Net Cash (Used) Provided By Investing Activities	(43,767)	126,284

See accompanying notes to consolidated financial statements.

MARKEL BERMUDA LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS (Continued)

	Years Ended December 31,	
	2018	2017
	(dollars in thousands)	
FINANCING ACTIVITIES		
Dividends and return of capital	—	(116,295)
Notes payable to affiliates	(117,625)	58
Due from affiliates	50,005	(10)
Additions to deposit liabilities	139	266
Payments of deposit liabilities	(4,201)	(5,195)
Net Cash Used By Financing Activities	(71,682)	(121,176)
Effect of foreign currency rate changes on cash, cash equivalents, restricted cash and restricted cash equivalents	(295)	12,136
Increase in cash, cash equivalents, restricted cash and restricted cash equivalents	11,511	30,587
Cash, cash equivalents, restricted cash and restricted cash equivalents at beginning of year	425,717	395,130
CASH, CASH EQUIVALENTS, RESTRICTED CASH AND RESTRICTED CASH EQUIVALENTS AT END OF YEAR	$ 437,335	$ 425,717
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION		
Taxes received (paid)	$ 50,023	$ (8,628)

See accompanying notes to consolidated financial statements.

1. General

Markel Bermuda Limited ("Markel Bermuda" or "the Company"), formerly known as Alterra Bermuda Limited and Max Bermuda Ltd. was incorporated on August 20, 1999 under the laws of Bermuda to provide diversified specialty insurance and reinsurance products to corporations, public entities and property and casualty insurers. The Company is registered as both a Class 4 commercial insurer and Class C long-term insurer under the insurance laws of Bermuda. The Company's ultimate parent company is Markel Corporation ("Markel"), a publicly traded, diversified financial holding company (NYSE: MKL), headquartered in Richmond, Virginia. Alterra Diversified Strategies Limited ("ADS"), a company organized under the laws of Bermuda, is the Company's wholly-owned subsidiary.

2. Summary of Significant Accounting Policies

a) Basis of Presentation. The accompanying consolidated financial statements have been prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP") and include the accounts of Markel Bermuda Limited and its subsidiary. All significant intercompany balances and transactions have been eliminated in consolidation.

b) Use of Estimates. The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities. Management periodically reviews its estimates and assumptions. Quarterly reviews include evaluating the adequacy of reserves for unpaid losses and loss adjustment expenses, life and annuity reinsurance benefit reserves, litigation contingencies, the reinsurance allowance for doubtful accounts and income tax liabilities, as well as analyzing the recoverability of deferred tax assets. Actual results may differ materially from the estimates and assumptions used in preparing the consolidated financial statements.

c) Investments. Available-for-sale investments and equity securities are recorded at estimated fair value. Unrealized gains and losses on available-for sale investments, net of income taxes, are included in accumulated other comprehensive income in shareholder's equity. The Company completes a detailed analysis each quarter to assess whether the decline in the fair value of any available-for-sale investment below its cost basis is deemed other-than-temporary.

Premiums and discounts are amortized or accreted over the lives of the related fixed maturities as an adjustment to the yield using the effective interest method. Dividend and interest income are recognized when earned. Realized investment gains or losses are included in earnings. Realized gains or losses from sales of investments are derived using the first-in, first-out method on the trade date.

Effective January 1, 2018, the Company adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) No. 2016-01, Financial Instruments (Topic 825): Recognition and Measurement of Financial Assets and Financial Liabilities. Upon adoption of the ASU, equity securities are no longer classified as available-for-sale and unrealized gains and losses on equity securities, net of income taxes, are included in earnings. In accordance with the provisions of the ASU, prior periods have not been restated to conform to the new presentation. See note 2(p) for further discussion of the impact of prospectively adopting this standard.

The changes in unrealized gains and losses for certain investments in affiliates recorded at fair value are recognized in net income.

d) Cash and Cash Equivalents. The Company considers all investments with original maturities of 90 days or less to be cash equivalents. The carrying value of the Company's cash and cash equivalents and restricted cash and cash equivalents approximates fair value.

e) Restricted Cash and Cash Equivalents. Cash and cash equivalents that are restricted as to withdrawal or use are recorded as restricted cash and cash equivalents. The carrying value of the Company's restricted cash and cash equivalents approximates fair value.

f) Receivables. Receivables include amounts receivable from agents, brokers and insureds, which represent premiums that are both currently due and amounts not yet due on insurance and reinsurance policies. Premiums for insurance policies are generally due at inception. Premiums for reinsurance policies generally become due over the period of coverage based on the policy terms. The Company monitors the credit risk associated with premiums receivable, taking into consideration the fact that in certain instances credit risk may be reduced by the Company's right to offset loss obligations or unearned premiums against premiums receivable. Amounts deemed uncollectible are charged to net income in the period they are determined. Changes in the estimate of reinsurance premiums written will result in an adjustment to premiums receivable in the period they are determined.

g) Reinsurance Recoverables. Amounts recoverable from reinsurers are estimated in a manner consistent with the claim liability associated with the reinsured business. Allowances are established for amounts deemed uncollectible and reinsurance recoverables are recorded net of these allowances. The Company evaluates the financial condition of its reinsurers and monitors concentration risk to minimize its exposure to significant losses from individual reinsurers.

h) Deferred Policy Acquisition Costs. Costs directly related to the acquisition of insurance and reinsurance premiums are deferred and amortized over the related policy period, generally one year. The Company only defers acquisition costs incurred that are related directly to the successful acquisition of new or renewal insurance contracts, including commissions to agents and brokers and premium taxes. Commissions received related to reinsurance premiums ceded are netted against broker commissions in determining acquisition costs eligible for deferral. To the extent that future policy revenues on existing policies are not adequate to cover related costs and expenses, deferred policy acquisition costs are charged to earnings. The Company does not consider anticipated investment income in determining whether a premium deficiency exists.

i) Income Taxes. The Company records deferred income taxes to reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in years in which those temporary differences are expected to be recovered or settled. Deferred tax assets are reduced by a valuation allowance when management believes it is more likely than not that some, or all, of the deferred tax assets will not be realized. The Company recognizes the tax benefit from an uncertain tax position taken or expected to be taken in income tax returns only if it is more likely than not that the tax position will be sustained upon examination by tax authorities, based on the technical merits of the position. Tax positions that meet the more likely than not threshold are then measured using a probability weighted approach, whereby the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate settlement is recognized. The Company recognizes interest and penalties related to uncertain tax positions in income tax expense.

j) Unpaid Losses and Loss Adjustment Expenses. Unpaid losses and loss adjustment expenses on the Company's property and casualty insurance business are based on evaluations of reported claims and estimates for losses and loss adjustment expenses incurred but not reported. Estimates for losses and loss adjustment expenses incurred but not reported are based on reserve development studies, among other things. The Company does not discount reserves for losses and loss adjustment expenses to reflect estimated present value. Recorded reserves are estimates, and the ultimate liability may be greater or less than the estimates.

k) Life and Annuity Benefits. Long duration reinsurance contracts for life and annuity benefits subject the Company to mortality, longevity and morbidity risks. The assumptions used to determine policy benefit reserves were determined at contract inception and are generally locked-in for the life of the contract unless an unlocking event occurs. To the extent existing policy reserves, together with the present value of future gross premiums and expected investment income earned thereon, are not adequate to cover the present value of future benefits, settlement and maintenance costs, the locked-in assumptions are revised to current best estimate assumptions and a charge to earnings for life and annuity benefits is recognized at that time. Because of the assumptions and estimates used in establishing reserves for life and annuity benefit obligations and the long-term nature of these reinsurance contracts, the ultimate liability may be greater or less than the estimates.

l) Revenue Recognition. Insurance premiums are generally earned on a pro rata basis over the policy period, typically one year. The cost of reinsurance ceded is initially recorded as prepaid reinsurance premiums and is amortized over the reinsurance contract period in proportion to the amount of insurance protection provided. Premiums ceded are netted against premiums written.

Assumed reinsurance premiums are recorded at the inception of each contract based upon contract terms and information received from cedents and brokers and are earned on a pro rata basis over the coverage period, or for multi-year contracts, in proportion with the underlying risk exposure to the extent there is variability in the exposure through the coverage period. Changes in reinsurance premium estimates are expected and may result in significant adjustments in any period. These estimates change over time as additional information regarding changes in underlying exposures is obtained. Any subsequent differences arising on such estimates are recorded as premiums written in the period they are determined.

Certain contracts that the Company writes provide for reinstatement of coverage. Reinstatement premiums are the premiums for the restoration of the insurance or reinsurance limit of a contract to its full amount after a loss occurrence by the insured or reinsured. The Company accrues for reinstatement premiums resulting from losses recorded. Such accruals are based upon contractual terms and management judgment is involved with respect to the amount of losses recorded. Changes in estimates of losses recorded on contracts with reinstatement premium features will result in changes in reinstatement premiums based on contractual terms. Reinstatement premiums are recognized at the time losses are recorded and are earned on a pro-rata basis over the coverage period.

Deposits

Short duration reinsurance contracts entered into by the Company that are not deemed to transfer significant underwriting and timing risk are accounted for as deposits, whereby liabilities are initially recorded at the same amount as assets received. An initial accretion rate is established based on actuarial estimates whereby the deposit liability is increased to the estimated amount payable over the term of the contract. This accretion charge is presented in the period as interest expense or losses and loss adjustment expenses, as appropriate. Long duration contracts written by the Company that do not transfer significant mortality or morbidity risks are also accounted for as deposits. The Company periodically reassesses the amount of deposit liabilities. Changes to the estimated ultimate liability are recognized as an adjustment to earnings to reflect the cumulative effect since the inception of the contract. For certain contracts the future accretion rate of the liability is also adjusted over the remaining estimated contract term. For the years ended December 31, 2018 and 2017, losses and loss adjustment expenses includes $107 and $126, respectively, due to changes in the estimated ultimate liability related to short duration reinsurance contracts accounted for as deposits.

m) Stock-based Compensation. Stock-based compensation expense is recognized as part of general and administrative expenses over the requisite service period.

n) Foreign Currency Translation. The U.S. Dollar is the Company's reporting currency and the primary functional currency of its foreign underwriting operations. Foreign currency transaction gains and losses are the result of exchange rate changes on transactions denominated in currencies other than the functional currency at each foreign entity. Monetary assets and liabilities are remeasured to the functional currency at current exchange rates, with resulting gains and losses included in net foreign exchange losses (gains) within net income. Non-monetary assets and liabilities are remeasured to the functional currency at historic exchange rates. Available-for-sale securities are recorded at fair value with resulting gains and losses, including the portion attributable to movements in exchange rates, included in the change in net unrealized gains on available-for-sale investments, net of taxes within other comprehensive income. While we attempt to naturally hedge our exposure to foreign currency fluctuations by matching assets and liabilities in the same currencies, there is a financial statement mismatch between the gains or losses recorded in net income related to insurance reserves denominated in non-functional currencies and the gains or losses recorded in other comprehensive income related to the available-for-sale securities held in non-functional currencies supporting the reserves.

Assets and liabilities of foreign operations denominated in a functional currency other than the U.S. Dollar are translated into the U.S. Dollar at current exchange rates, with resulting gains or losses included, net of taxes, in the change in foreign currency translation adjustments within other comprehensive income.

Historically, the Company also designated certain additional currencies, including the British Pound Sterling, the Euro, and the Canadian Dollar, as functional currencies within its foreign underwriting operations that were deemed to contain distinct and separable operations in those foreign economic environments. However, over time the Company's foreign underwriting operations have evolved and are now managed on a global basis. Effective January 1, 2018, management reassessed its functional currency determination as required by ASC 830, *Foreign Currency Matters*, and concluded that its foreign underwriting operations have evolved to function as an extension, or integral component, of the Company's global underwriting operations, and are no longer deemed to contain distinct and separable operations. As a result, more foreign currency denominated transactions are designated as non-functional, with related remeasurement gains and losses included in net income. The change in the Company's functional currency determination has been applied on a prospective basis in accordance with ASC 830. Therefore, any translation gains and losses that were previously recorded in accumulated other comprehensive income through December 31, 2017 remain unchanged as of December 31, 2018.

o) Comprehensive Income. Comprehensive income represents all changes in equity that result from recognized transactions and other economic events during the period. Other comprehensive income refers to revenues, expenses, gains and losses that under U.S. GAAP are included in comprehensive income but excluded from net income, such as unrealized gains or losses on investments and foreign currency translation adjustments.

p) Recent Accounting Pronouncements. Effective January 1, 2018, the Company adopted ASU No. 2016-01, *Financial Instruments (Topic 825): Recognition and Measurement of Financial Assets and Financial Liabilities*. As a result of adoption of this ASU, equity instruments that do not result in consolidation and are not accounted for under the equity method are measured at fair value and any changes in fair value are recognized in net income. Previously, the Company's equity securities were classified as available-for-sale and changes in fair value were recorded in other comprehensive income. Upon adoption of this ASU, cumulative net unrealized gains on equity securities of $336,395 net of deferred income taxes of $89,421 were reclassified from accumulated other comprehensive income into retained earnings. Prior periods have not been restated to conform to the current presentation. See note 3(f) for details regarding the change in net unrealized gains on equity securities included in net income for the year ended December 31, 2018 and included in other comprehensive income for the year ended December 31, 2017.

Effective January 1, 2018, the Company early adopted ASU No. 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. The ASU provides an option to reclassify tax effects remaining in accumulated other comprehensive income as a result of the Tax Cuts and Jobs Act (TCJA) to retained earnings. Upon enactment of the TCJA, the U.S. corporate tax rate was reduced from 35% to 21% and the Company's U.S. deferred tax balances were remeasured to the lower enacted U.S. corporate tax rate. U.S. GAAP requires the effects of changes in tax rates and laws on deferred tax balances to be recorded as a component of income tax expense in the period of enactment, even if the assets and liabilities relate to items of accumulated other comprehensive income. As a result of adopting the ASU, the Company reclassified $11,485 of previously recognized deferred taxes from accumulated other comprehensive income into retained earnings as of January 1, 2018.

The following ASUs relate to topics relevant to the Company's operations and were adopted effective January 1, 2018. These ASUs did not have a material impact on the Company's financial position, results of operations or cash flows:

- ASU No. 2016-16, Income Taxes (Topic 740): Intra-entity Transfers of Assets Other Than Inventory
- ASU No. 2017-09, Stock Compensation (Topic 718): Scope of Modification Accounting
- ASU No. 2014-09, Revenue from Contracts with Customer (Topic 606)

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The ASU requires lessees to record most leases on their balance sheets as a lease liability with a corresponding right-of-use asset, but continue to recognize the related leasing expense within net income. The FASB subsequently issued ASUs with improvements to the guidance, including ASU No. 2018-11, Leases (Topic 842): Targeted Improvements, which provides entities with an additional transition method to apply the new standard. Under the new optional transition method, an entity initially applies ASC 842 at the adoption date and recognizes a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. The ASUs become effective for the Company during the first quarter of 2019 and will be applied using a modified retrospective approach. The Company intends to elect the new transition method permitted by ASU No. 2018-11. Short-term leases will not be recorded on the balance sheet. The Company has elected the package of practical expedients permitted under the transition guidance within the new standard which, among other things, allows companies to carry forward their historical lease classification.

The Company's future minimum lease payments for noncancelable operating leases, which represent minimum annual rental commitments excluding taxes, insurance and other operating costs and which will be subject to this new guidance, totaled $5,161 at December 31, 2018. The Company has finalized its evaluation of the impacts that the adoption of the accounting guidance will have on the consolidated financial statements. The Company determined right-of-use assets and lease liabilities of

$4,819 and $4,712, respectively, which were recognized in the consolidated balance upon adoption. Adoption of this standard did not have a material impact on the Company's results of operations and will did not impact the Company's cash flows.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. The ASU replaces the current incurred loss model used to measure impairment losses with an expected loss model for trade, reinsurance, and other receivables as well as financial instruments measured at amortized cost. For available-for-sale debt securities, which are measured at fair value, the ASU requires entities to record impairments as an allowance, rather than a reduction of the amortized cost, as is currently required under the other-than-temporary impairment model. ASU No. 2016-13 becomes effective for the Company during the first quarter of 2021 and will be applied using a modified retrospective approach through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The Company is currently evaluating ASU No. 2016-13 to determine the potential impact that adopting this standard will have on its consolidated financial statements. Application of the new expected loss model for measuring impairment losses will not impact the Company's investment portfolio, none of which is measured at amortized cost, but will impact the Company's other financial assets, including its reinsurance recoverables. Upon adoption of this ASU, any impairment losses on the Company's available-for-sale debt securities will be recorded as an allowance, subject to reversal, rather than as a reduction in amortized cost.

In August 2018, the FASB issued ASU No. 2018-12, Financial Services-Insurance (Topic 944): Targeted Improvements to the Accounting for Long-Duration Contracts. The ASU requires insurance entities with long duration contracts to: (1) review and, if there is a change, update the assumptions used to measure cash flows at least annually, as well as update the discount rate assumption at each reporting date; (2) measure all market risk benefits associated with deposit (or account balance) contracts at fair value; and (3) disclose liability rollforwards and information about significant inputs, judgments, assumptions and methods used in measurement, including changes thereto and the effect of those changes on measurement. ASU No. 2018-12 becomes effective for the Company during the first quarter of 2022. The ASU will, among other things, impact the discount rate used in estimating reserves for the Company's life and annuity reinsurance portfolio, which is in runoff. Currently, the discount rate assumption is locked-in for the life of the contracts, unless there is a loss recognition event. The Company is currently evaluating ASU No. 2018-12 to determine the impact that adopting this standard will have on its consolidated financial statements.

The following ASUs are relevant to the Company's operations and are not yet effective. These ASUs are not expected to have a material impact on the Company's financial position, results of operations or cash flows:

- ASU No. 2017-08, Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities
- ASU No. 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement
- ASU No. 2018-14, Compensation-Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20): Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans
- ASU No. 2018-17, Consolidation (Topic 810): Targeted Improvements to Related Party Guidance for Variable Interest Entities

3. Investments

a) The following tables summarize the Company's available-for-sale investments. Commercial and residential mortgage-backed securities include securities issued by U.S. government-sponsored enterprises and U.S. government agencies.

	December 31, 2018			
(dollars in thousands)	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Estimated Fair Value
Fixed maturity securities:				
U.S. Treasury	$ 29,749	$ 88	$ —	$ 29,837
U.S. government-sponsored enterprises	95,897	3,186	(282)	98,801
Obligations of states, municipalities and political subdivisions	719,447	22,275	(3,887)	737,835
Foreign governments	593,071	171,983	(3,034)	762,020
Commercial mortgage-backed	288,587	1,452	(7,665)	282,374
Residential mortgage-backed	270,710	1,582	(2,758)	269,534
Asset-backed	8,517	—	(21)	8,496
Corporate	257,327	26,386	(795)	282,918
Total fixed maturity securities	2,263,305	226,952	(18,442)	2,471,815
Short-term investments	142,374	8	(394)	141,988
Investments, available-for-sale	$ 2,405,679	$ 226,960	$ (18,836)	$ 2,613,803

	December 31, 2017			
(dollars in thousands)	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Estimated Fair Value
Fixed maturity securities:				
U.S. Treasury	$ 1,152	$ —	$ (1)	$ 1,151
U.S. government-sponsored enterprises	96,313	5,480	(260)	101,533
Obligations of states, municipalities and political subdivisions	733,823	42,173	(374)	775,622
Foreign governments	558,633	205,155	(3)	763,785
Commercial mortgage-backed	251,936	2,330	(3,448)	250,818
Residential mortgage-backed	298,740	5,532	(792)	303,480
Asset-backed	10,265	65	—	10,330
Corporate	349,139	52,167	(123)	401,183
Total fixed maturity securities	2,300,001	312,902	(5,001)	2,607,902
Equity securities: (1)				
Insurance, banks and other financial institutions	398,024	168,339	(189)	566,174
Industrial, consumer and all other	611,230	263,496	(5,829)	868,897
Total equity securities	1,009,254	431,835	(6,018)	1,435,071
Short-term investments	223,885	19	(1)	223,903
Investments, available-for-sale	$ 3,533,140	$ 744,756	$ (11,020)	$ 4,266,876

(1) Effective January 1, 2018, the Company adopted ASU No. 2016-01 and equity securities are no longer classified as available-for sale. Prior periods have not been restated to conform to the current presentation. See note 2.

b) The following tables summarize gross unrealized investment losses by the length of time that securities have continuously been in an unrealized loss position.

	December 31, 2018					
	Less than 12 months		12 months or longer		Total	
(dollars in thousands)	Estimated Fair Value	Gross Unrealized Holding Losses	Estimated Fair Value	Gross Unrealized Holding Losses	Estimated Fair Value	Gross Unrealized Holding Losses
Fixed maturity securities:						
U.S. government-sponsored enterprises	$ —	$ —	$ 28,954	$ (282)	$ 28,954	$ (282)
Obligations of states, municipalities and political subdivisions	132,154	(2,961)	45,445	(926)	177,599	(3,887)
Foreign governments	66,836	(3,034)	—	—	66,836	(3,034)
Commercial mortgage-backed	62,829	(723)	132,371	(6,942)	195,200	(7,665)
Residential mortgage-backed	108,209	(1,005)	58,635	(1,753)	166,844	(2,758)
Asset-backed	8,496	(21)	—	—	8,496	(21)
Corporate	36,595	(626)	9,014	(169)	45,609	(795)
Total fixed maturity securities	415,119	(8,370)	274,419	(10,072)	689,538	(18,442)
Short-term investments	25,078	(394)	—	—	25,078	(394)
Total	$ 440,197	$ (8,764)	$ 274,419	$ (10,072)	$ 714,616	$ (18,836)

At December 31, 2018, the Company held 131 securities with a total estimated fair value of $714,616 and gross unrealized losses of $18,836. Of these 131 securities, 64 securities had been in a continuous unrealized loss position for one year or longer and had a total estimated fair value of $274,419 and gross unrealized losses of $10,072. The Company does not intend to sell or believe it will be required to sell these available-for-sale securities before recovery of their amortized cost.

	December 31, 2017					
	Less than 12 months		12 months or longer		Total	
(dollars in thousands)	Estimated Fair Value	Gross Unrealized Holding Losses	Estimated Fair Value	Gross Unrealized Holding Losses	Estimated Fair Value	Gross Unrealized Holding Losses
Fixed maturity securities:						
U.S. Treasury	$ —	$ —	$ 1,151	$ (1)	$ 1,151	$ (1)
U.S. government-sponsored enterprises	9,142	(70)	19,929	(190)	29,071	(260)
Obligations of states, municipalities and political subdivisions	17,262	(146)	31,382	(228)	48,644	(374)
Foreign governments	—	—	3,396	(3)	3,396	(3)
Commercial mortgage-backed	31,667	(348)	106,236	(3,100)	137,903	(3,448)
Residential mortgage-backed	47,620	(136)	37,330	(656)	84,950	(792)
Asset-backed	—	—	—	—	—	—
Corporate	8,309	(16)	9,163	(107)	17,472	(123)
Total fixed maturity securities	114,000	(716)	208,587	(4,285)	322,587	(5,001)
Equity securities: [1]						
Insurance, banks and other financial institutions	17,387	(189)	—	—	17,387	(189)
Industrial, consumer and all other	43,879	(5,461)	2,165	(368)	46,044	(5,829)
Total equity securities	61,266	(5,650)	2,165	(368)	63,431	(6,018)
Short-term investments	48,937	(1)	—	—	48,937	(1)
Total	$ 224,203	$ (6,367)	$ 210,752	$ (4,653)	$ 434,955	$ (11,020)

(1) Effective January 1, 2018, the Company adopted ASU No. 2016-01 and equity securities are no longer classified as available-for sale. Prior periods have not been restated to conform to the current presentation. See note 2.

At December 31, 2017, the Company held 94 securities with a total estimated fair value of $434,955 and gross unrealized losses of $11,020. Of these 94 securities, 47 securities had been in a continuous unrealized loss position for one year or longer and had a total estimated fair value of $210,752 and gross unrealized losses of $4,653. Of these securities, 44 securities were fixed maturity securities and three were equity securities.

The Company completes a detailed analysis each quarter to assess whether the decline in the fair value of any investment below its cost basis is deemed other-than-temporary. All available-for-sale securities with unrealized losses are reviewed. The Company considers many factors in completing its quarterly review of securities with unrealized losses for other-than-temporary impairment, including the length of time and the extent to which fair value has been below cost and the financial condition and near-term prospects of the issuer.

For fixed maturities, the Company considers whether it intends to sell the security or if it is more likely than not that it will be required to sell the security before recovery, the implied yield-to-maturity, the credit quality of the issuer and the ability to recover all amounts outstanding when contractually due. For fixed maturities where the Company intends to sell the security or it is more likely than not that the Company will be required to sell the security before recovery of its amortized cost, a decline in fair value is considered to be other-than-temporary and is recognized in net income based on the fair value of the security at the time of assessment, resulting in a new cost basis for the security. If the decline in fair value of a fixed maturity below its amortized cost is considered to be other-than-temporary based upon other considerations, the Company compares the estimated present value of the cash flows expected to be collected to the amortized cost of the security. The extent to which the estimated present value of the cash flows expected to be collected is less than the amortized cost of the security represents the credit related portion of the other-than-temporary impairment, which is recognized in net income, resulting in a new cost basis for the security. Any remaining decline in fair value represents the non-credit portion of the other-than-temporary impairment, which is recognized in other comprehensive income.

Prior to the adoption of ASU No. 2016-01, equity securities were considered available-for-sale and were included in the analysis of other than temporary impairments. For equity securities, the ability and intent to hold the security for a period of time sufficient to allow for anticipated recovery was considered. A decline in fair value of equity securities that was considered to be other-than-temporary was recognized in net income based on the fair value of the security at the time of assessment, resulting in a new cost basis for the security.

c) The following table sets forth certain information regarding the investment ratings of the Company's fixed maturities as of December 31, 2018 and 2017.

	Years Ended December 31,			
	2018	2018	2017	2017
(dollars in thousands)	Estimated Fair Value	%	Estimated Fair Value	%
AAA	$ 1,410,382	57.1	$ 1,415,691	54.3
AA	860,024	34.8	957,221	36.7
A	128,950	5.2	198,103	7.6
BBB	71,431	2.9	36,887	1.4
BB	—	—	—	—
B	—	—	—	—
CCC or lower	—	—	—	—
Not Rated	1,028	—	—	—
Total fixed maturity securities	$ 2,471,815	100.0	$ 2,607,902	100.0

d) The amortized cost and estimated fair value of fixed maturity securities at December 31, 2018 are shown below by contractual maturity.

(dollars in thousands)	Amortized Cost	Estimated Fair Value
Due in one year or less	$ 61,906	$ 61,444
Due after one year through five years	275,679	283,652
Due after five years through ten years	449,981	492,694
Due after ten years	907,925	1,073,621
	1,695,491	1,911,411
Commercial mortgage-backed	288,587	282,374
Residential mortgage-backed	270,710	269,534
Asset-backed	8,517	8,496
Total fixed maturity securities	$ 2,263,305	$ 2,471,815

Expected maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties, and the lenders may have the right to put the securities back to the borrower. Based on expected maturities, the estimated average duration of fixed maturity securities at December 31, 2018 was 7.5 years.

e) The following table presents the components of net investment income.

(dollars in thousands)	Years Ended December 31, 2018	2017
Interest:		
Fixed maturity securities	$ 83,794	$ 96,665
Short-term investments, including overnight deposits	5,250	2,045
Other investments	227	948
Funds held	16	9
Loans to parent & affiliates	16,340	15,256
Dividends on equity securities	23,405	19,246
Dividends on investments in affiliates	18,370	7,615
Investment expenses	(22,966)	(20,524)
Net investment income	$ 124,436	$ 121,260

f) The following table presents net realized investment gains and the change in net unrealized gains on investments.

(dollars in thousands)	Years Ended December 31, 2018	2017
Realized gains:		
Sales and maturities of fixed maturity securities	$ 4,227	$ 23,757
Sales of equity securities	—	3,581
Sales and maturities of short-term investments	600	—
Other investments	1,238	5,373
Total realized gains	6,065	32,711
Realized losses:		
Sales of fixed maturity securities	(2,651)	(2,906)
Sales of equity securities	—	(2,119)
Sales and maturities of short-term investments	(1,969)	(6)
Other-than-temporary impairments	—	(4,520)
Other investments	—	(19)
Total realized losses	(4,620)	(9,570)
Net realized investment gains	1,445	23,141
Change in fair value of equity securities: (1)		
Change in fair value of equity securities sold during the period	6,632	7,050
Change in fair value of equity securities held at the end of the period	(152,137)	(61,757)
Change in fair value of equity securities (1)	(145,505)	(54,707)
Net investment losses	$ (144,060)	$ (31,566)
Change in net unrealized gains on investments included in other comprehensive income (loss):		
Fixed maturity securities	$ (99,391)	$ (1,050)
Equity securities (1)	—	295,550
Short-term investments	(404)	16
Net increase (decrease)	$ (99,795)	$ 294,516

(1) Effective January 1, 2018, the Company adopted ASU No. 2016-01. As a result, equity securities are no longer classified as available-for-sale with unrealized gains and losses recognized in other comprehensive income; rather all changes in the fair value of equity securities are now recognized in net income. Prior periods have not been restated to conform to the current presentation. Prior to adopting ASU No. 2016-01, the Company recorded certain investments in equity securities at estimated fair value with changes in unrealized gains and losses recorded in net income.

There were no write downs for other-than-temporary declines in the estimated fair value of investments in 2018. Gross realized losses in 2017 included $4,520 of write downs for other-than-temporary declines in the estimated fair value of investments. These write downs included $4,193 related to equities in industrial, consumer or other types of businesses and $327 related to corporate bonds.

g) Total restricted assets are included on the Company's consolidated balance sheets as follows.

	December 31,	
(dollars in thousands)	2018	2017
Investments	$ 2,966,631	$ 2,915,352
Cash and cash equivalents	187,358	121,747
Investment in affiliate, at fair value	17,573	80,843
Other investments, at cost	740	898
Total	$ 3,172,302	$ 3,118,840

The following table presents the components of restricted assets.

	December 31,	
(dollars in thousands)	2018	2017
Restricted assets held in trust or on deposit to support underwriting activities	$ 2,846,145	$ 2,755,699
Investments and cash and cash equivalents pledged as security for letters of credit	307,844	281,400
Investments restricted from withdrawal	18,313	81,741
Total	$ 3,172,302	$ 3,118,840

h) The Company holds investments in Markel CATCo Reinsurance Fund Ltd., a Bermuda exempted mutual fund company comprised of multiple segregated accounts (Markel CATCo Funds). The company accounts for the investment based on the fair value option, with changes in fair value reflected in net realized investment gains (losses) in the income statement. Investments in Markel CATCo Funds are reflected as investments in affiliates, at fair value on the consolidated balance sheets, and includes an investment in the Markel Diversified Fund. In 2017, the Company made an additional $50,000 investment in the Markel Diversified Fund. During 2018 the Company redeemed $29,225 of its investment in the Markel Diversified Fund and invested $25,000 in the Markel CATCo Aquilo Fund Ltd. As of December 31, 2018, the Company's exposure to risk from Markel CATCo Funds is generally limited to its investments. See note 10 for details regarding reinsurance contracts entered into in 2019 by the Company on behalf of Markel CATCo Re. The fair value of our investments in Markel CATCo Funds totaled $47,268 and $125,312 at December 31, 2018 and 2017, respectively. See note 7 for discussion of the inputs and valuation techniques used to measure the fair value of our investments in Markel CATCo Funds.

4. Income Taxes

Markel Bermuda is incorporated in Bermuda and pursuant to Bermuda law is not taxed on either income or capital gains. The Company has received an assurance from the Bermuda Minister of Finance under the Exempted Undertaking Tax Protection Act, 1966 of Bermuda that if legislation is enacted in Bermuda that imposes tax computed on profits or income, or computed on any capital asset, gain or appreciation, then the imposition of any such tax will not be applicable until March 2035.

Effective May 2, 2013, Markel Bermuda made an irrevocable election under Section 953(d) of the United States Internal Revenue Code ("IRC"), as amended, to be taxed as a U.S. domestic corporation. As a result of this "domestic election", the Company is subject to U.S. taxation on its world-wide income as if it were a U.S. corporation.

The Company records income taxes based on the enacted tax laws and rates applicable in the relevant jurisdictions for each of the years ended December 31, 2018 and 2017. Interest and penalties related to uncertain tax positions, of which there have been none, would be recognized in income tax expense. The tax years open to examination by U.S. tax authorities are 2015 to the present.

The amount of income taxes paid may vary in comparison to the current income tax expense recognized in the period due to differences in the timing between the tax expense recognition and the required tax remittance. The lag in remittance can vary between the different jurisdictions in which the Company operates.

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act ("TCJA"), which made significant modifications to U.S. federal income tax law, most of which were effective January 1, 2018. As a result, the Company recorded a one-time tax benefit of $10,135 in the fourth quarter of 2017, a portion of which was considered provisional. The one-time tax benefit from the TCJA was primarily attributable to the remeasurement of the Company's U.S. deferred tax assets and liabilities on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their tax bases at the lower enacted U.S. corporate tax rate as well as the tax on the deemed repatriation of foreign earnings. In 2018, the Company completed its determination of the accounting implications of the TCJA which resulted in additional tax expense of $3,872.

The components of income taxes attributable to operations for the years ended December 31, 2018 and 2017 were as follows.

	Years Ended December 31,	
(dollars in thousands)	2018	2017
Current:		
United States	$ (12,585)	$ (55,284)
Total current tax benefit	(12,585)	(55,284)
Deferred:		
United States	(6,946)	17,836
Total deferred tax (benefit) expense	(6,946)	17,836
Income tax benefit	$ (19,531)	$ (37,448)
Income tax benefit in net loss	(19,531)	(37,448)
Income tax (benefit) expense on other comprehensive (loss) income	(15,906)	99,884
Total income tax (benefit) expense	$ (35,437)	$ 62,436

All of the Company's loss before income tax (benefit) expense for the years ended December 31, 2018 and 2017, is domestically sourced to Bermuda.

The following table presents a reconciliation of income taxes computed using the U.S. corporate tax rate to the Company's income tax benefit.

	Years Ended December 31,	
(dollars in thousands)	2018	2017
Income tax benefit computed on pre-tax loss at U.S corporate tax rate	$ (31,698)	$ (40,431)
(Increase) decrease to income tax benefit resulting from:		
TCJA	3,872	(10,135)
Permanent differences		
Nondeductible loss on Markel CATCo Funds	15,502	21,615
Tax exempt investment income	(6,693)	(9,655)
Other	(514)	1,158
Income tax benefit	$ (19,531)	$ (37,448)

The following table presents the components of domestic and foreign deferred tax assets and liabilities.

	December 31,	
(dollars in thousands)	2018	2017
Deferred tax asset:		
Life and annuity benefits	$ 41,235	$ 40,914
Impact of net unrealized losses on life and annuity benefits	37,186	38,590
Property and casualty losses	29,771	29,794
Net unearned property and casualty premiums	20,840	25,593
Compensation related liabilities	3,901	6,248
Other differences between financial reporting and tax bases	325	1,872
Deferred tax asset	133,258	143,011
Deferred tax liability:		
Investments	89,196	123,970
Deferred ceding commissions, net	21,304	29,065
Insurance reserves transition adjustment	6,118	—
Other differences between financial reporting and tax bases	1,999	1,311
Deferred tax liability	118,617	154,346
Net deferred tax asset (liability)	$ 14,641	$ (11,335)

Based on the Company's historical and expected future taxable earnings, management believes that it is more likely than not that the Company will realize the benefit of the existing deferred tax assets at December 31, 2018. A valuation allowance would be established if there is a change in management's assessment of the amount of deferred tax assets that are realizable.

The Company does not have any unrecognized tax benefits at December 31, 2018 and 2017.

5. Unpaid Losses and Loss Adjustment Expenses

a) The following table presents a reconciliation of consolidated beginning and ending reserves for losses and loss adjustment expenses.

	Years Ended December 31,	
(dollars in thousands)	2018	2017
Gross balance at January 1	$ 3,401,893	$ 2,924,062
Less: Reinsurance recoverables on unpaid losses	(795,791)	(675,188)
Net balance at January 1	2,606,102	2,248,874
Foreign currency movement	(5,964)	12,265
Incurred losses related to:		
Current accident year	902,316	956,576
Prior accident years	(57,549)	(94,515)
Total incurred	844,767	862,061
Paid losses related to:		
Current accident year	(148,732)	(165,110)
Prior accident years	(436,008)	(310,753)
Total paid	(584,740)	(475,863)
Commutations	(15,723)	(46,889)
Foreign currency revaluation	628	5,654
Net balance at December 31	2,845,070	2,606,102
Plus: Reinsurance recoverables on unpaid losses	846,585	795,791
Gross balance at December 31	$ 3,691,655	$ 3,401,893

In 2018, incurred losses and loss adjustment expenses included $57,549 of net favorable development on prior years' loss reserves, which was comprised of net favorable development for the Company's reinsurance reserves of $3,979 and of net favorable development for the Company's insurance reserves of $53,570. The net favorable development for the reinsurance reserves was across several lines of business but principally related to the marine and energy, whole account and credit/surety lines of business ($17,508, $14,343 and $8,445 of net favorable development, respectively) partially offset by unfavorable development related to the professional liability, general liability and property lines of business ($16,641, $12,932 and $11,804 of net unfavorable development, respectively). The net favorable development for the insurance reserves was across several lines of business but principally related to the professional liability, general liability and marine and energy lines of business ($24,722, $15,498 and 9,057 of net favorable development, respectively).

In 2017, incurred losses and loss adjustment expenses included $94,515 of net favorable development on prior years' loss reserves, which was comprised of net favorable development for the Company's reinsurance reserves of $22,467 and of net favorable development for the Company's insurance reserves of $72,048. The net favorable development for the reinsurance reserves was across several lines of business but principally related to the whole account, property and aviation lines of business ($12,994, $11,288 and $6,710 of net favorable development, respectively) partially offset by $11,202 of net unfavorable development related to the professional liability line of business. The net favorable development for the insurance reserves was across several lines of business but principally related to the professional liability and general liability lines of business ($38,875 and $29,435, respectively).

The Company uses a variety of techniques to establish the liabilities for unpaid losses and loss adjustment expenses based upon estimates of the ultimate amounts payable. The Company maintains reserves for specific claims incurred and reported ("case reserves") and reserves for claims incurred but not reported ("IBNR" reserves), which include expected development on reported claims. The Company does not discount its reserves for losses and loss adjustment expenses to reflect estimated present value.

As of any balance sheet date, all claims have not yet been reported, and some claims may not be reported for many years. As a result, the liability for unpaid losses and loss adjustment expenses includes significant estimates for incurred but not reported claims.

There is normally a time lag between when a loss event occurs and when it is actually reported to the Company. The actuarial methods that the Company uses to estimate losses have been designed to address the lag in loss reporting as well as the delay in obtaining information that would allow the Company to more accurately estimate future payments. There is also a time lag between cedents establishing case reserves and re-estimating their reserves, and notifying the Company of the new or revised case reserves. As a result, the reporting lag is more pronounced in reinsurance contracts than in the insurance contracts due to the reliance on ceding companies to report their claims. On reinsurance transactions, the reporting lag will generally be 60 to 90 days after the end of a reporting period, but can be longer in some cases. Based on the experience of the Company's actuaries and management, loss development factors and trending techniques are selected to mitigate the difficulties caused by reporting lags. The loss development and trending factor selections are evaluated at least annually and updated using cedent specific and industry data.

IBNR reserves are based on the estimated ultimate cost of settling claims, including the effects of inflation and other social and economic factors, using past experience adjusted for current trends and any other factors that would modify past experience. IBNR reserves, which include expected development on reported claims, are generally calculated by subtracting paid losses and loss adjustment expenses and case reserves from estimated ultimate losses and loss adjustment expenses. IBNR reserves were 67% of total unpaid losses and loss adjustment expenses at December 31, 2018 and December 31, 2017, respectively.

In establishing liabilities for unpaid losses and loss adjustment expenses, the Company's actuaries estimate an ultimate loss ratio, by accident year or policy year, for each product line with input from underwriting and claims associates. For product lines in which loss reserves are established on a policy year basis, the Company has developed a methodology to convert from policy year to accident year for financial reporting purposes. In estimating an ultimate loss ratio for a particular line of business, the actuaries may use one or more actuarial reserving methods and select from these a single point estimate. To varying degrees, these methods include detailed statistical analysis of past claim reporting, settlement activity, claim frequency and severity, policyholder loss experience, industry loss experience and changes in market conditions, policy forms and exposures. Greater judgment may be required when new product lines are introduced or when there have been changes in claims handling practices, as the statistical data available may be insufficient. These estimates also reflect implicit and explicit assumptions regarding the potential effects of external factors, including economic and social inflation, judicial decisions, changes in law, general economic conditions and recent trends in these factors. Management believes the process of evaluating past experience, adjusted for the effects of current developments and anticipated trends, is an appropriate basis for predicting future events.

Loss reserves are established at management's best estimate, which is generally higher than the corresponding actuarially calculated point estimate. The actuarial point estimate represents the actuaries' estimate of the most likely amount that will ultimately be paid to settle the loss reserves that are recorded at a particular point in time; however, there is inherent uncertainty in the point estimate as it is the expected value in a range of possible reserve estimates. In some cases, actuarial analyses, which are based on statistical analysis, cannot fully incorporate all of the subjective factors that affect development of losses. In other cases, management's perspective of these more subjective factors may differ from the actuarial perspective. Subjective factors where management's perspective may differ from that of the actuaries include: the credibility and timeliness of claims information received from third parties, economic and social inflation, judicial decisions, changes in law, changes in underwriting or claims handling practices, general economic conditions, the risk of moral hazard and other current and developing trends within the insurance and reinsurance markets, including the effects of competition. As a result, the actuarially calculated point estimates for each of line of business represents starting points for management's quarterly review of loss reserves.

Inherent in the Company's reserving practices is the desire to establish loss reserves that are more likely redundant than deficient. As such, the Company seeks to establish loss reserves that will ultimately prove to be adequate. Furthermore, the Company's philosophy is to price its insurance products to make an underwriting profit. Management continually attempts to improve its loss estimation process by refining its ability to analyze loss development patterns, claim payments and other information, but uncertainty remains regarding the potential for adverse development of estimated ultimate liabilities.

Management currently believes the Company's gross and net reserves are adequate. However, there is no precise method for evaluating the impact of any significant factor on the adequacy of reserves, and actual results will differ from original estimates.

b) The following tables present undiscounted loss development information, by accident year, for the Company's Insurance and Reinsurance operations, including cumulative incurred and paid losses and allocated loss adjustment expenses, net of reinsurance, as well as the corresponding amount of IBNR reserves as of December 31, 2018. This level of disaggregation is consistent with how the Company analyzes loss reserves for both internal and external reporting purposes. The loss development information for the year ended December 31, 2017 is presented as supplementary information. Loss development information for years prior to 2016, which would also be supplemental information, has not been presented. Insurance business written by the Company's affiliates and ceded to the Company are included in Insurance operations. Assumed reinsurance business written by the Company's affiliates and ceded to the Company are included in Reinsurance operations. All amounts included in the tables below related to transactions denominated in a foreign currency have been translated into U.S. dollars using the exchange rates in effect at December 31, 2018.

The difference between the segment loss development implied by the tables for the year ended December 31, 2018 and actual losses and loss adjustment expenses on prior accident years for the Insurance and Reinsurance segments for the year ended December 31, 2018 is primarily attributed to the fact that amounts presented in these tables exclude amounts attributed to the 2015 and prior accident years, exclude unallocated loss adjustment expenses, and the differences in the presentation of foreign currency movements, as described above.

The Insurance operations table below also includes claim frequency information, by accident year. The Company defines a claim as a single claim incident, per policy, which may include multiple claimants and multiple coverages on a single policy. Claim counts include claims closed without a payment as well as claims where the Company is monitoring to determine if an exposure exists, even if a reserve has not been established.

All of the business contained within the Company's Reinsurance operations represents treaty business that is assumed from other insurance or reinsurance companies, for which the Company does not have access to the underlying claim counts. Further, this business includes both quota share and excess of loss treaty reinsurance, through which only a portion of each reported claim results in losses to the Company. As such, the Company excluded claim count information from the Reinsurance operations disclosures.

Insurance operations

	Ultimate Incurred Losses and Allocated Loss Adjustment Expenses, Net of Reinsurance				
	Unaudited				
(in thousands)	As of December 31,			Total of Incurred- but-Not-Reported Liabilities, Net of Reinsurance	Cumulative Number of Reported Claims (thousands)
Accident Year	2016	2017	2018	December 31, 2018	
2016	$ 154,230	$ 217,254	$ 175,886	$ 96,358	4
2017		432,663	474,057	239,721	5
2018			423,103	245,524	5
			$ 1,073,046		

	Cumulative Paid Losses and Allocated Loss Adjustment Expenses, Net of Reinsurance		
	Unaudited		
	As of December 31,		
Accident Year	2016	2017	2018
2016	$ 21,446	$ 68,057	$ 90,748
2017		67,969	195,506
2018			71,730
			$ 357,984
All outstanding liabilities for unpaid losses and loss adjustment expenses before 2016, net of reinsurance			421,275
Total liabilities for unpaid losses and loss adjustment expenses, net of reinsurance			$ 1,136,337

Reinsurance operations

	Ultimate Incurred Losses and Allocated Loss Adjustment Expenses, Net of Reinsurance			
	Unaudited			Total of Incurred-but-Not-Reported Liabilities, Net of Reinsurance
(in thousands)	As of December 31,			
Accident Year	2016	2017	2018	December 31, 2018
2016	$ 239,631	$ 270,822	$ 279,311	$ 112,346
2017		503,178	513,965	265,645
2018			453,684	303,352
			$ 1,246,960	

	Cumulative Paid Losses and Allocated Loss Adjustment Expenses, Net of Reinsurance		
	Unaudited		
	As of December 31,		
Accident Year	2016	2017	2018
2016	$ 37,505	$ 88,953	$ 127,935
2017		82,243	176,797
2018			61,680
			$ 366,412
All outstanding liabilities for unpaid losses and loss adjustment expenses before 2016, net of reinsurance			798,672
Total liabilities for unpaid losses and loss adjustment expenses, net of reinsurance			$ 1,679,220

The following table presents supplementary information about average historical claims duration as of December 31, 2018 based on cumulative incurred and paid losses and allocated loss adjustment expenses presented above.

	Average Annual Percentage payout of Incurred Losses by Age (in Years), Net of Reinsurance		
Unaudited	1	2	3
Insurance	14.5%	26.7%	12.9%
Reinsurance	14.3%	18.4%	14.0%

The following table reconciles the net incurred and paid loss development tables to the liability for losses and loss adjustment expenses in the consolidated balance sheet.

(dollars in thousands)	December 31, 2018
Net outstanding liabilities	
Insurance	$ 1,136,337
Reinsurance	1,679,220
Other	5,942
Liabilities for unpaid losses and loss adjustment expenses, net of reinsurance	2,821,499
Reinsurance recoverable on unpaid losses	
Insurance	606,161
Reinsurance	236,562
Other	3,862
Total reinsurance recoverable on unpaid losses	846,585
Unallocated loss adjustment expenses	23,571
Total gross liability for unpaid losses and loss adjustment expenses	$ 3,691,655

6. Life and Annuity Benefits

The following table presents life and annuity benefits.

	December 31,	
(dollars in thousands)	2018	2017
Life	$ 128,745	$ 134,526
Annuities	827,136	895,298
Accident and health	56,935	66,654
Total	$ 1,012,816	$ 1,096,478

Life and annuity benefits are compiled on a reinsurance contract-by-contract basis and are discounted using standard actuarial techniques and cash flow models. Since the development of the life and annuity reinsurance reserves is based upon cash flow projection models, the Company must make estimates and assumptions based on cedent experience, industry mortality tables, and expense and investment experience, including a provision for adverse deviation. The assumptions used to determine policy benefit reserves were determined at the inception date and are generally locked-in for the life of the contract unless an unlocking event occurs. To the extent existing policy reserves, together with the present value of future gross premiums and expected investment income earned thereon, are not adequate to cover the present value of future benefits, settlement and maintenance costs, the locked-in assumptions are revised to current best estimate assumptions and a charge to earnings for life and annuity benefits is recognized at that time.

During 2018 and 2017, as a result of this review, the Company recorded a decrease of $24,052 and an increase of $8,329, respectively, to the life and annuity benefits through other comprehensive income which was triggered by the recognition of unrealized gains and losses on investments throughout the year.

Because of the assumptions and estimates used in establishing the Company's reserves for life and annuity benefit obligations and the long-term nature of these reinsurance contracts, the ultimate liability may be greater or less than the estimates. The average discount rate for the life and annuity benefit reserves was 3.75% as at December 31, 2018 and 2017, respectively.

As of December 31, 2018, the largest life and annuity benefits reserve for a single contract was 33% of the total.

No annuities included in life and annuity benefits in the consolidated balance sheet are subject to discretionary withdrawal. Included in deposit liabilities as of December 31, 2018 and 2017 are annuities of $1,327 and $1,342, respectively, which are subject to discretionary withdrawal. Deposit liabilities also include $22,088 and $24,024 as of December 31, 2018 and 2017, respectively, representing the account value of a universal life reinsurance contract.

7. Fair Value Measurements

FASB ASC 820-10, *Fair Value Measurements and Disclosures,* establishes a three-level hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs used to measure the assets or liabilities fall within different levels of the hierarchy, the classification is based on the lowest level input that is significant to the fair value measurement of the asset or liability.

Classification of assets and liabilities within the hierarchy considers the markets in which the assets and liabilities are traded and the reliability and transparency of the assumptions used to determine fair value. The hierarchy requires the use of observable market data when available. The levels of the hierarchy are defined as follows:

Level 1 - Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities traded in active markets.

Level 2 - Inputs to the valuation methodology include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability and market-corroborated inputs.

Level 3 - Inputs to the valuation methodology are unobservable for the asset or liability and are significant to the fair value measurement.

In accordance with FASB ASC 820, the Company determines fair value based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, the Company uses various methods, including the market, income and cost approaches. The Company uses valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs. The following section describes the valuation methodologies used by the Company to measure assets and liabilities at fair value, including an indication of the level within the fair value hierarchy in which each asset or liability is generally classified.

Investments, at fair value. Investments are recorded at fair value on a recurring basis and include fixed maturity securities, equity securities, short-term investments, hybrid financial instruments, and the investments in affiliates. Short-term investments include certificates of deposit, commercial paper, discount notes and treasury bills with original maturities of one year or less. Fair value for investments is determined by the Company after considering various sources of information, including information provided by a third party pricing service. The pricing service provides prices for substantially all of the Company's fixed maturity securities and equity securities. In determining fair value, the Company generally does not adjust the prices obtained from the pricing service. The Company obtains an understanding of the pricing service's valuation methodologies and related inputs, which include, but are not limited to, reported trades, benchmark yields, issuer spreads, bids, offers, duration, credit ratings, estimated cash flows and prepayment speeds. The Company validates prices provided by the pricing service by reviewing prices from other pricing sources and analyzing pricing data in certain instances.

The Company has evaluated the various types of securities in its investment portfolio to determine an appropriate fair value hierarchy level based upon trading activity and the observability of market inputs. Level 1 investments include those traded on an active exchange, such as the New York Stock Exchange. Level 2 investments include U.S. Treasury securities, government-sponsored enterprises, municipal bonds, foreign government bonds, commercial mortgage-backed securities, residential mortgage-backed securities, asset-backed securities, corporate debt securities, and hybrid financial instruments. Level 3 investments include the Company's investments in Markel CATCo Funds, as further described in note 3, which are not traded on an active exchange and are valued using unobservable inputs.

Fair value for investments is measured based upon quoted prices in active markets, if available. Due to variations in trading volumes and the lack of quoted market prices, fixed maturity securities are classified as Level 2 investments. The fair value of fixed maturity securities is normally derived through recent reported trades for identical or similar securities, making adjustments through the reporting date based upon available market observable data described above. If there are no recent reported trades, the fair value of fixed maturity securities may be derived through the use of matrix pricing or model processes, where future cash flow expectations are developed based upon collateral performance and discounted at an estimated market rate. Significant inputs used to determine the fair value of obligations of states, municipalities and political subdivisions, corporate bonds and obligations of foreign governments include reported trades, benchmark yields, issuer spreads, bids, offers, credit information and estimated cash flows. Significant inputs used to determine the fair value of commercial mortgage-backed securities, residential mortgage-backed securities and asset-backed securities include the type of underlying assets, benchmark yields, prepayment speeds, collateral information, tranche type and volatility, estimated cash flows, credit information, default rates, recovery rates, issuer spreads and the year of issue.

Due to the significance of unobservable inputs required in measuring the fair value of the Company's investments in affiliates, this investment is classified as Level 3 within the fair value hierarchy. Changes in fair value of the Company's investments in affiliates are included in net realized and unrealized investment gains (losses) in net income. The Company's investments in affiliates is its investment in the Markel Diversified Fund (the "Fund"), a segregated account of Markel CATCo Reinsurance Fund Ltd., a mutual fund managed by Markel CATCo Investment Management Ltd. (MCIM). The fair value of the Fund is derived using the reported net asset value ("NAV") as the primary input, as well as other observable and unobservable inputs as deemed necessary by management. Management has obtained an understanding of the inputs, assumptions, process, and controls used to determine NAV, which is calculated by an independent third party. Unobservable inputs to the NAV calculations include assumptions around premium earnings patterns and loss reserve estimates for the underlying securitized reinsurance contracts in which the Fund invests. Significant unobservable inputs used in the valuation of the Fund's investments include an adjustment to include the fair value of the equity that was issued by one of the Fund's underlying investments in exchange for notes receivable, rather than cash, which is excluded from NAV. In general, the Company's investment in the Fund is redeemable annually as of January 1st of each calendar year. However, in the event significant losses are incurred during the year, as was the case in 2018 and 2017, the Fund has the ability to designate a portion of the Company's investment as a side pocket, which can prevent it from being redeemed. The amount of investments in affiliates at fair value subject to side pockets as of December 31, 2018 and 2017 was $17,573 and $80,843, respectively.

The Company's valuation policies and procedures for the Level 3 investment are determined by management. Fair value measurements are analyzed quarterly to ensure the change in fair value from prior periods is reasonable relative to management's understanding of the underlying investments, recent market trends and external market data.

The following tables present the balances of assets measured at fair value on a recurring basis by level within the fair value hierarchy.

	December 31, 2018			
(dollars in thousands)	Level 1	Level 2	Level 3	Total
Fixed maturity securities:				
U.S. Treasury	$ —	$ 29,837	$ —	$ 29,837
U.S. government-sponsored enterprises	—	98,801	$ —	98,801
Obligations of states, municipalities and political subdivisions	—	737,835	—	737,835
Foreign governments	—	762,020	—	762,020
Commercial mortgage-backed	—	282,374	—	282,374
Residential mortgage-backed	—	269,534	—	269,534
Asset-backed	—	8,496	—	8,496
Corporate	—	282,918	—	282,918
Total fixed maturity securities	—	2,471,815	—	2,471,815
Equity securities:				
Insurance, banks and other financial institutions	585,244	—	—	585,244
Industrial, consumer and all other	962,353	—	—	962,353
Total equity securities	1,547,597	—	—	1,547,597
Short-term investments	141,988	—	—	141,988
Investments in affiliates	—	—	47,268	47,268
Total investments	$ 1,689,585	$ 2,471,815	$ 47,268	$ 4,208,668

	December 31, 2017			
(dollars in thousands)	Level 1	Level 2	Level 3	Total
Fixed maturity securities:				
U.S. Treasury	$ —	$ 1,151	$ —	$ 1,151
U.S. government-sponsored enterprises	—	101,533	$ —	101,533
Obligations of states, municipalities and political subdivisions	—	775,622	—	775,622
Foreign governments	—	763,785	—	763,785
Commercial mortgage-backed	—	250,818	—	250,818
Residential mortgage-backed	—	303,480	—	303,480
Asset-backed	—	10,330	—	10,330
Corporate	—	401,183	—	401,183
Total fixed maturity securities	—	2,607,902	—	2,607,902
Equity securities:				
Insurance, banks and other financial institutions	566,174	—	—	566,174
Industrial, consumer and all other	868,897	—	—	868,897
Total equity securities	1,435,071	—	—	1,435,071
Short-term investments	223,903	—	—	223,903
Investments in affiliates	—	—	125,312	125,312
Total investments at fair value	$ 1,658,974	$ 2,607,902	$ 125,312	$ 4,392,188

The following table summarizes changes in Level 3 investments measured at fair value on a recurring basis.

(dollars in thousands)	2018	2017
Investments in affiliates at fair value, beginning of period	$ 125,312	$ 137,069
Purchases	25,000	50,000
Sales	(29,225)	—
Total losses included in:	—	—
Net loss	(73,819)	(61,757)
Other comprehensive income (loss)	—	—
Transfers into Level 3	—	—
Transfers out of Level 3	—	—
Investments in affiliates at fair value, end of period	$ 47,268	$ 125,312
Net unrealized losses included in net loss relating to assets held at December 31, 2018 and 2017 (1)	$ (73,819)	$ (61,757)

(1) Included in change in fair value of equity securities in the consolidated statements of income (loss) for the years ended December 31, 2018 and 2017.

Net investment losses related to the Company's investment in affiliates primarily resulted from decreases in the NAV of the Fund in both 2018 and 2017.

There were no transfers into or out of Level 1, Level 2 or Level 3 during 2018 or 2017.

The Company did not have any assets or liabilities measured at fair value on a non-recurring basis during the years ended December 31, 2018 and 2017.

8. Reinsurance

The Company uses reinsurance and retrocessional reinsurance to manage its net retention on individual risks and overall exposure to losses while providing it with the ability to offer policies with sufficient limits to meet policyholder needs. In a reinsurance transaction, an insurance company transfers, or cedes, all or part of its exposure in return for a portion of the premium. In a retrocessional reinsurance transaction, a reinsurance company transfers, or cedes, all or part of its exposure in return for a portion of the premium. The ceding of insurance does not legally discharge the Company from its primary liability for the full amount of the policies, and the Company will be required to pay the loss and bear collection risk if the reinsurer fails to meet its obligations under the reinsurance or retrocessional agreement.

A credit risk exists with ceded reinsurance to the extent that any reinsurer is unable to meet the obligations assumed under the reinsurance or retrocessional contracts. Allowances are established for amounts deemed uncollectible. The Company evaluates the financial condition of its reinsurers and monitors concentration of credit risk arising from its exposure to individual reinsurers.

As of December 31, 2018, 86.2% of reinsurance recoverable on paid and unpaid losses were with reinsurers rated “A” or above by A.M. Best Company, 3.5% are rated “A-” and the remaining 10.3% of reinsurance recoverables are with “NR-not rated” reinsurers. To further reduce credit exposure to reinsurance recoverable balances, the Company has received collateral, including letters of credit and trust accounts, from certain reinsurers. Collateral related to these reinsurance agreements is available, without restriction, when the Company pays losses covered by the reinsurance agreements.

At both December 31, 2018 and 2017, balances recoverable from the ten largest reinsurers represented 67% of the reinsurance recoverable on paid and unpaid losses, before considering reinsurance allowances and collateral. At December 31, 2018 the largest reinsurance balance was due from AXIS Reinsurance Company and represented 14% of the reinsurance recoverable on paid and unpaid losses, before considering reinsurance allowances and collateral.

(Expressed in thousands of U.S. Dollars)

The following table summarizes the effect of reinsurance and retrocessional reinsurance on premiums written and earned.

	Years Ended December 31,			
Property and Casualty	Written		Earned	
	2018	2017	2018	2017
Direct	$ 236,640	$ 217,604	$ 224,480	$ 217,963
Assumed	969,943	1,097,881	1,090,162	1,035,842
Ceded	(194,691)	(187,729)	(202,262)	(203,736)
Net premiums	$ 1,011,892	$ 1,127,756	$ 1,112,380	$ 1,050,069

The percentage of ceded earned premiums to gross earned premiums was 15.4% and 16.2% for the years ended December 31, 2018 and 2017, respectively.

Incurred losses and loss adjustment expenses were net of reinsurance recoverables (ceded incurred losses and loss adjustment expenses) of $172,091 and $240,674 for the years ended December 31, 2018 and 2017, respectively.

9. Commitments and Contingencies

a) Lease commitments

The Company leases substantially all of its facilities and certain furniture and equipment under noncancelable operating leases with remaining terms up to five years. The minimum annual rental commitments, excluding taxes, insurance and other operating costs payable directly by the Company, for noncancelable operating leases at December 31, 2018 will range from $507 to $1,412 per year over the next five years. Rental expense was $749 and $1,326 for the years ended December 31, 2018 and 2017, respectively.

b) Concentrations of credit risk

The Company's portfolio of cash, fixed maturity securities, equity securities, and hybrid financial instruments is managed following prudent standards of diversification. The guidelines limit the allowable holdings of a single issue and issuers. The Company believes that there are no significant concentrations of credit risk associated with its portfolio of cash, fixed maturity, and equity securities.

At December 31, 2018, investments in securities issued by the U.S. government-sponsored enterprises, German Government, and Berkshire Hathaway Inc. were the only investments in any one issuer that exceeded 10% of shareholder's equity. At December 31, 2017, investments in securities issued by the U.S. Treasury, U.S. government agencies, U.S. government-sponsored enterprises, German Government, Berkshire Hathaway Inc., and Blackrock Inc. were the only investments in any one issuer that exceeded 10% of shareholder's equity.

At December 31, 2018, the Company's ten largest equity holdings represented $740,002, or 48%, of the equity portfolio. Investments in the property and casualty insurance industry represented $360,080, or 23% of the equity portfolio at December 31, 2018.

Premiums receivable comprise amounts due within one year or amounts not yet due. As of December 31, 2018 and 2017, the Company's largest premiums receivable balances from a single unrelated party were 2% of total premiums receivable, respectively.

For the years ended December 31, 2018 and 2017, brokered transactions accounted for the majority of the Company's property and casualty gross premiums written. For the years ended December 31, 2018 and 2017, the top three independent producing intermediaries and brokerage firms accounted for 15.5%, 8.3% and 5.2%; and 14.7%, 12.7% and 4.2%, respectively, of property and casualty gross premiums written.

c) Credit facilities

The Company holds a letter of credit facility with $100,000 of committed and $200,000 of uncommitted capacity that expires on November 25, 2019. This facility allows for the issuance of letters of credit in U.S. dollars and other currencies. At December 31, 2018 and 2017, $226,159 and $250,570 of letters of credit, respectively, denominated in various currencies, were issued and outstanding under this credit facility.

At December 31, 2018, the Company was in compliance with all covenants contained in its credit facilities. To the extent that the Company is not in compliance with its covenants, the Company's access to these credit facilities could be restricted.

10. Related Party Transactions

a) Amounts due from / to affiliates

The amounts due from / (to) affiliates consist of the following as of December 31, 2018 and 2017. The carrying value of the loan and note payable balances presented in the table below approximate fair value.

	December 31,	
(dollars in thousands)	2018	2017
Loan to Markel Corporation	$ 285,000	$ 285,000
Loan to Markel Ventures, Inc.	190,000	130,000
Note payable to Markel Diversified Fund	(24,875)	(62,500)
Note payable to Markel Corporation	(50,000)	(80,000)
Other amounts due from affiliates, net	18,617	10,289
Total	$ 418,742	$ 282,789

On December 16, 2015, ADS entered into a $285,000 loan agreement with Markel Corporation. The loan bears interest at a fixed rate of 4.18% per annum. The loan is due on December 31, 2025.

On January 1, 2016, the Company entered into a $62,500 on-demand funding commitment note agreement with Markel Diversified Fund, a segregated account of Markel CATCo Reinsurance Fund Ltd. The note bore interest at a fixed rate of 1.93% per annum for the year ended December 31, 2016. On January 1, 2017, the note was amended to extend the maturity date to December 31, 2017. On January 1, 2018, the note was amended to extend the maturity date to December 31, 2018. The note bore interest at a fixed rate of 3.49% per annum for the year ended December 31, 2017 and 2018, respectively. On January 12, 2018 $37,625 of the note was repaid. Subsequent to December 31, 2018, the note was amended to extend the maturity date to December 31, 2019 at a fixed interest rate of 3.49% per annum.

On December 27, 2017, the Company entered into an $80,000 note payable with Markel Corporation. The note is due on demand and bears interest at a variable rate per annum equal to the short-term annual Applicable Federal Rate published by the U.S. Internal Revenue Service, reset monthly. The note was repaid on March 9, 2018.

On August 11, 2017, the Company entered into a $130,000 loan agreement with Markel Ventures, Inc, a wholly-owned subsidiary of Markel Corporation. The loan bears interest at a fixed rate of 3.67% per annum. The loan is due on August 11, 2027 and is guaranteed by Markel Corporation. On February 1, 2018 $50,000 of this loan was repaid.

On September 26, 2018, the Company entered into a $110,000 loan agreement with Markel Ventures, Inc. The loan bears interest at a fixed rate of 4.54% per annum. The loan is due on September 26, 2028 and is guaranteed by Markel Corporation.

On December 26, 2018, the Company entered into an $50,000 note payable with Markel Corporation. The note is due on demand and bears interest at a variable rate per annum equal to the short-term annual Applicable Federal Rate published by the U.S. Internal Revenue Service, reset monthly. The note was repaid on April 5, 2019.

The amounts due from/to affiliates represent amounts receivable and payable from/to companies consolidated by Markel Corporation. The balances arise in the normal course of business and are due on demand and are non-interest bearing.

The Company has also deposited funds at Lloyd's for the benefit of Lloyd's syndicates related by common control. The amount held in deposit was $552,692 and $484,799 as of December 31, 2018 and 2017, respectively, and this amount is included in restricted assets in Note 3.

b) Markel CATCo

Within the Company's reinsurance operations, the Company enters into reinsurance contracts that are ceded to Markel CATCo Re Ltd. (Markel CATCo Re), a company related by common control. Under this program, the Company retains underwriting risk for annual aggregate agreement year losses in excess of a limit the Company believes is highly unlikely to be exceeded. To the extent losses under this program exceed the prescribed limit, the Company is obligated to pay such losses to the cedents without recourse to Markel CATCo Re. For the years ended December 31, 2018 and 2017, gross premiums written on behalf of Markel CATCo Re were $10,912 and $9,743, respectively.

In early 2019, the Company committed to enter into various reinsurance contracts with third parties on behalf of Markel CATCo Re. These reinsurance contracts will primarily cover losses for events that may occur during 2019, however, in some instances, coverage will also provide for adverse development on 2018 and prior accident years' loss events. Incurred losses on these contracts will be fully ceded to Markel CATCo Re. The loss exposures on these contracts will be fully collateralized by Markel CATCo Re up to an amount that the Company believes is highly unlikely to be exceeded. The Company will have credit risk from Markel CATCo Re for any uncollateralized amounts. Markel CATCo Re's ability to pay losses in excess of the collateralized amounts will depend on the availability of funds that are not otherwise needed to pay losses on other contracts. The Company's maximum exposure to loss on these contracts, representing the net uncollateralized risks, is not expected to exceed $250,000 in 2019.

c) Markel Global Reinsurance Company

The Company provides reinsurance to Markel Global Reinsurance Company ("Markel Global Re"), formerly known as Alterra Reinsurance USA, Inc., a company related by common control. Management believes the terms of the reinsurance agreement are similar to those of an arm's length transaction with an unrelated party. On June 28, 2018 the Company and Markel Global Re entered into a termination agreement such that the Company no longer reinsured new or renewal treaties effective July 1, 2018. The accompanying consolidated balance sheets and consolidated statements of income and comprehensive income include the following amounts related to the reinsurance agreement with Markel Global Re.

	December 31,	
(dollars in thousands)	2018	2017
Balance Sheet		
Premiums receivable	$ 148,624	$ 222,615
Deferred policy acquisition costs	47,162	77,816
Property and casualty losses	714,288	608,794
Unearned property and casualty premiums	145,610	239,162
Reinsurance balances payable	32,092	39,245
Income Statement		
Gross premiums written	$ 195,372	$ 295,662
Net earned premiums	288,548	279,888
Net losses and loss expenses	242,892	231,692
Acquisition costs	99,636	104,011

d) Lloyd's Syndicates

The Company provides reinsurance to Lloyd's syndicates and corporate capital providers which are related by common control. Management believes the terms of the reinsurance agreements are similar to those of an arm's length transaction with an unrelated party. The accompanying consolidated balance sheets and consolidated statements of income and comprehensive income include the following amounts related to such reinsurance agreements.

	December 31,	
(dollars in thousands)	2018	2017
Balance Sheet		
Premiums receivable	$ 394,862	$ 343,681
Deferred policy acquisition costs	95,932	62,373
Property and casualty losses	493,166	367,362
Unearned property and casualty premiums	168,284	195,624
Reinsurance balances payable	(511)	511
Income Statement		
Gross premiums written	$ 477,918	$ 484,199
Net earned premiums	500,066	452,662
Net losses and loss expenses	355,167	376,280
Acquisition costs	184,845	184,961

e) Markel International Insurance Company Limited

The Company provides reinsurance to Markel International Insurance Company Limited ("MIICL"), a company related by common control. Management believes the terms of the reinsurance agreements are similar to those of an arm's length transaction with an unrelated party. The accompanying consolidated balance sheets and consolidated statements of income and comprehensive income include the following amounts related to the reinsurance agreements with MIICL.

	December 31,	
(dollars in thousands)	2018	2017
Balance Sheet		
Premiums receivable	$ 9,150	$ 6,428
Deferred policy acquisition costs	2,291	1,598
Property and casualty losses	237,853	254,051
Unearned property and casualty premiums	12,282	9,474
Reinsurance balances payable	1,410	5,853
Income Statement		
Gross premiums written	$ 31,724	$ 14,833
Net earned premiums	28,754	16,032
Net losses and loss expenses	5,873	1,038
Acquisition costs	6,169	271

f) Markel International S.E.

Effective April 1, 2018, the Company entered into a reinsurance agreement with Markel International S.E. ("MISE"), a company related by common control. Management believes the terms of the reinsurance agreement are similar to those of an arm's length transaction with an unrelated party. The accompanying consolidated balance sheets and consolidated statements of income and comprehensive income include amounts related to the reinsurance agreement with MISE.

In March 2019, the Company entered into a guarantee agreement with MISE. Under the terms of the agreement, the Company guaranteed payment of amounts due and payable on policies written or renewed by MISE. The guarantee serves to enhance MISE's financial strength, and provides protection against limit losses on certain product lines. The Company estimates the maximum potential exposure under the guarantee to be no more than $50,000.

On March 29, 2019, MIICL entered into a Part VII transaction with MISE, the effect of which is to novate insurance assets and liabilities with European exposure to MISE. That transaction included a portion of the Company's reinsurance agreement with MIICL.

	December 31,	
(dollars in thousands)	2018	2017
Balance Sheet		
Premiums receivable	$ —	$ —
Deferred policy acquisition costs	111	—
Property and casualty losses	38	—
Unearned property and casualty premiums	507	—
Reinsurance balances payable	—	—
Income Statement		
Gross premiums written	$ 599	$ —
Net earned premiums	96	—
Net losses and loss expenses	38	—
Acquisition costs	21	—

11. Statutory Financial Information

Statutory capital and surplus information for the Company as of December 31, 2018 and 2017 is summarized below.

(dollars in thousands)	2018	2017
Required statutory capital and surplus	$ 983,957	$ 958,602
Actual statutory capital and surplus	1,495,563	1,779,387
Statutory net loss	$ (131,411)	$ (78,070)

Under the Bermuda Insurance Act, 1978 and related regulations, the Company is subject to capital requirements calculated using the Bermuda Solvency and Capital Requirement, or BSCR model, which is a standardized statutory risk-based capital model used to measure the risk associated with the Company's assets, liabilities and premiums. The Company's required statutory capital and surplus under the BSCR model is referred to as the enhanced capital requirement ("ECR"). The Company is required to calculate and submit the ECR to the Bermuda Monetary Authority ("BMA"), annually. Following receipt of the submission of the Company's ECR the BMA has the authority to impose additional capital requirements (capital add-ons) if it deems necessary. If a company fails to maintain or meet its ECR, the BMA may take various degrees of regulatory action. As of December 31, 2018, the Company met its ECR.

The Company is also required under its Class 4 license to maintain a minimum liquidity ratio whereby the value of its relevant assets is not less than 75% of the amount of its relevant liabilities for general business. Relevant assets include cash and cash equivalents, fixed maturities, other investments, accrued interest income, premiums receivable, and funds withheld. The relevant liabilities are total general business insurance reserves and total other liabilities, less sundry liabilities. As of December 31, 2018, the Company met the minimum liquidity ratio requirement.

The Company may declare dividends subject to it continuing to meet its solvency and capital requirements, which includes continuing to hold statutory capital and surplus equal to or exceeding its ECR. The Company is prohibited from declaring or paying in any fiscal year dividends of more than 25% of its prior year's statutory capital and surplus unless the Company files with the BMA an affidavit signed by at least two members of the Board of Directors attesting that a dividend would not cause the Company to fail to meet its relevant margins. As of December 31, 2018 and 2017 the Company could pay dividends in the subsequent year without providing an affidavit to the BMA of $373,891 and $444,847, respectively.

The payment of dividends is limited by applicable regulations and statutory requirements of Bermuda. The Company is prohibited from declaring or paying a dividend if such payment would reduce its respective regulatory capital below the required minimum as required by law and regulatory practice. The Company is also subject to certain restrictions under its credit facilities that affect its ability to pay dividends. The Company paid dividends of $92,576 and $330,000 during 2018 and 2017, respectively.

12. Pensions

The Company provides pension benefits to eligible employees and their dependents through various defined contribution plans, which vary for each subsidiary. Under these plans, the Company and its employees each contribute a certain percentage of the employee’s gross salary into the plan each month. The Company’s contributions are immediately 100% vested. Pension expenses totaled $936 and $1,026 for the year ended December 31, 2018 and 2017, respectively.

13. Significant Non-Cash Transactions

The company engaged in the following significant non-cash operating and investing activities during the year:

(dollars in thousands)	2018	2017
Return of capital in equity securities from investment in affiliate	$ 54,447	$ —
Dividend in equity securities from investment in affiliate	10,800	—
Dividend of investment in affiliate, at cost	92,576	—
Dividend of available-for-sale securities	—	213,705
Return of capital in available-for-sale securities	—	190,000
Loan from Markel Corporation in short-term investments	—	79,942
Capital contribution in short-term investments	—	20,000

14. Subsequent Events

Subsequent events have been evaluated through April 26, 2019.