Jackson National Life Insurance Company and Subsidiaries

Consolidated Financial Statements

December 31, 2019 and 2018

Jackson National Life Insurance Company and Subsidiaries

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December 31, 2019 and 2018

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KPMG LLP
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Report of Independent Registered Public Accounting Firm

To the Stockholder and Board of Directors
Jackson National Life Insurance Company and Subsidiaries:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Jackson National Life Insurance Company and Subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

KPMG LLP

We have served as the Company's auditor since 1999.

Dallas, Texas
March 5, 2020

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KPMG International Cooperative ("KPMG International"), a Swiss entity.

Jackson National Life Insurance Company and Subsidiaries
Consolidated Balance Sheets
(In thousands, except per share information)

	December 31,	
Assets	**2019**	**2018**
Investments:		
Available for sale debt securities, at fair value (amortized cost: 2019, $53,505,152; 2018, $52,388,400, including $151,071 and $170,362 at fair value under the fair value option at December 31, 2019 and 2018, respectively)	$ 56,974,022	$ 51,865,357
Equity securities, at fair value	1,531,780	1,748,395
Commercial mortgage loans, net of allowance	9,903,569	9,405,897
Policy loans (includes $3,585,838 and $3,543,680 at fair value under the fair value option at December 31, 2019 and 2018, respectively)	4,705,744	4,687,437
Derivative instruments	1,486,367	730,637
Other invested assets	382,245	389,183
Total investments	74,983,727	68,826,906
Cash and cash equivalents	1,843,787	3,741,713
Accrued investment income	588,639	622,483
Deferred acquisition costs	11,665,230	10,412,327
Reinsurance recoverable	8,410,165	8,497,846
Deferred income taxes, net	676,810	710,503
Receivables from affiliates	247,770	283,793
Other assets	1,269,580	1,240,521
Separate account assets	195,070,474	163,301,375
Total assets	$ 294,756,182	$ 257,637,467
Liabilities and Equity		
Liabilities		
Reserves for future policy benefits and claims payable	$ 19,128,441	$ 19,609,799
Other contract holder funds	64,048,396	60,449,255
Funds held under reinsurance treaties, at fair value under the fair value option	3,760,294	3,745,074
Debt	574,724	615,733
Securities lending payable	48,318	43,470
Derivative instruments	24,262	324,389
Other liabilities	2,999,056	2,238,556
Separate account liabilities	195,070,474	163,301,375
Total liabilities	285,653,965	250,327,651
Equity		
Common stock, $1.15 par value; authorized 50,000 shares; issued and outstanding 12,000 shares	13,800	13,800
Additional paid-in capital	4,088,323	3,968,323
Shares held in trust	(4,311)	(11,382)
Equity compensation reserve	526	3,599
Accumulated other comprehensive income, net of tax expense (benefit) of $331,047 in 2019 and $(235,484) in 2018	2,475,459	(182,759)
Retained earnings	2,528,420	3,518,235
Total stockholder's equity	9,102,217	7,309,816
Total liabilities and equity	$ 294,756,182	$ 257,637,467

See accompanying Notes to Consolidated Financial Statements.

Jackson National Life Insurance Company and Subsidiaries
Consolidated Income Statements
(In thousands)

	Years Ended December 31,		
	2019	**2018**	**2017**
Revenues			
Fee income	$ 6,324,974	$ 6,182,969	$ 5,734,935
Premium	537,130	5,122,823	169,079
Net investment income	2,761,300	2,601,307	2,654,542
Net realized losses on investments:			
Total other-than-temporary impairments	(1,619)	(11,358)	(3,070)
Portion of other-than-temporary impairments included in other comprehensive income	(724)	(512)	18
Net other-than-temporary impairments	(2,343)	(11,870)	(3,052)
Other net investment losses	(6,457,062)	(613,129)	(3,424,277)
Total net realized losses on investments	(6,459,405)	(624,999)	(3,427,329)
Other income	69,533	60,626	68,395
Total revenues	3,233,532	13,342,726	5,199,622
Benefits and Expenses			
Death, other policy benefits and change in policy reserves, net of deferrals	1,430,007	6,942,148	1,023,522
Interest credited on other contract holder funds, net of deferrals	1,632,488	1,547,599	1,547,561
Interest expense	83,601	86,172	54,342
Operating costs and other expenses, net of deferrals	1,907,054	1,340,186	1,817,455
Amortization of deferred acquisition and sales inducement costs	(981,423)	1,151,244	(27,492)
Total benefits and expenses	4,071,727	11,067,349	4,415,388
Pretax (loss) income	(838,195)	2,275,377	784,234
Income tax (benefit) expense	(373,380)	248,342	322,932
Net (loss) income	$ (464,815)	$ 2,027,035	$ 461,302

See accompanying Notes to Consolidated Financial Statements.

Jackson National Life Insurance Company and Subsidiaries
Consolidated Statements of Comprehensive Income
(In thousands)

	Years Ended December 31,		
	2019	**2018**	**2017**
Net (loss) income	$ (464,815)	$ 2,027,035	$ 461,302
Other comprehensive income, net of tax:			
Net unrealized gains (losses) on available for sale debt securities not other-than-temporarily impaired (net of tax expense (benefit) of: 2019 $689,532; 2018 $(352,559); 2017 $168,816)	2,593,958	(1,326,295)	406,815
Net unrealized losses on other-than-temporarily impaired available for sale debt securities (net of tax benefit of: 2019 $140; 2018 $97; 2017 $4)	(529)	(366)	(8)
Reclassification adjustment for gains (losses) included in net income (net of tax expense (benefit) of: 2019 $17,223; 2018 $(23,700); 2017 $47,948)	64,789	(89,156)	89,045
Total other comprehensive income (loss)	2,658,218	(1,415,817)	495,852
Comprehensive income	$ 2,193,403	$ 611,218	$ 957,154

See accompanying Notes to Consolidated Financial Statements.

Jackson National Life Insurance Company and Subsidiaries
Consolidated Statements of Equity
(In thousands)

	Common Stock	Additional Paid-In Capital	Shares Held In Trust	Equity Compensation Reserve	Accumulated Other Comprehensive Income	Retained Earnings	Total Stockholder's Equity
Balances as of December 31, 2016	$ 13,800	$ 3,816,079	$ (22,686)	$ 5,785	$ 597,122	$ 2,222,359	$ 6,632,459
Net income	-	-	-	-	-	461,302	461,302
Change in unrealized investment gains and losses, net of tax	-	-	-	-	495,852	-	495,852
Dividends to stockholder	-	-	-	-	-	(600,487)	(600,487)
Shares acquired at cost	-	-	(2,392)	-	-	-	(2,392)
Shares distributed at cost	-	-	6,227	-	-	-	6,227
Reserve for equity compensation plans	-	-	-	4,464	-	-	4,464
Balances as of December 31, 2017	13,800	3,816,079	(18,851)	10,249	1,092,974	2,083,174	6,997,425
Net income	-	-	-	-	-	2,027,035	2,027,035
Change in unrealized investment gains and losses, net of tax	-	-	-	-	(1,415,817)	-	(1,415,817)
Capital Contribution	-	152,244	-	-	-	-	152,244
Dividends to stockholder	-	-	-	-	-	(451,890)	(451,890)
Cumulative effects of changes in accounting principles, net of tax	-	-	-	-	140,084	(140,084)	-
Shares acquired at cost	-	-	(5,386)	-	-	-	(5,386)
Shares distributed at cost	-	-	12,855	-	-	-	12,855
Reserve for equity compensation plans	-	-	-	(266)	-	-	(266)
Fair value of shares issued under equity compensation plans	-	-	-	(6,384)	-	-	(6,384)
Balances as of December 31, 2018	13,800	3,968,323	(11,382)	3,599	(182,759)	3,518,235	7,309,816
Net loss	-	-	-	-	-	(464,815)	(464,815)
Change in unrealized investment gains and losses, net of tax	-	-	-	-	2,658,218	-	2,658,218
Capital Contribution	-	120,000	-	-	-	-	120,000
Dividends to stockholder	-	-	-	-	-	(525,000)	(525,000)
Shares acquired at cost	-	-	(2,865)	-	-	-	(2,865)
Shares distributed at cost	-	-	9,936	-	-	-	9,936
Reserve for equity compensation plans	-	-	-	1,206	-	-	1,206
Fair value of shares issued under equity compensation plans	-	-	-	(4,279)	-	-	(4,279)
Balances as of December 31, 2019	$ 13,800	$ 4,088,323	$ (4,311)	$ 526	$ 2,475,459	$ 2,528,420	$ 9,102,217

See accompanying Notes to Consolidated Financial Statements.

Jackson National Life Insurance Company and Subsidiaries
Consolidated Statements of Cash Flows
(In thousands)

	Years Ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net (loss) income	$ (464,815)	$ 2,027,035	$ 461,302
Adjustments to reconcile net income to net cash provided by operating activities:			
Net realized (gains) losses on investments	(192,872)	18,628	50,663
Net losses on derivatives	6,579,610	480,132	3,130,445
Interest credited on other contract holder funds, gross	1,639,621	1,556,087	1,558,057
Mortality, expense and surrender charges	(640,930)	(663,090)	(671,593)
Amortization of discount and premium on investments	20,246	7,261	16,539
Deferred income tax (benefit) expense	(672,923)	134,520	541,038
Share-based compensation	54,780	26,324	70,810
Cash received from reinsurance transaction	36,583	321,898	-
Change in:			
Accrued investment income	38,748	36,019	77,774
Deferred sales inducements and acquisition costs	(1,788,555)	392,041	(881,511)
Income tax accruals	(79,688)	72,152	(204,405)
Other assets and liabilities, net	(171,271)	307,885	600,296
Net cash provided by operating activities	4,358,534	4,716,892	4,749,415
Cash flows from investing activities:			
Sales, maturities and repayments of:			
Debt securities	10,050,934	5,521,000	9,771,562
Equity securities	470,108	135,504	325,225
Commercial mortgage loans	1,242,742	1,028,609	1,401,641
Purchases of:			
Debt securities	(10,514,918)	(7,873,628)	(6,546,920)
Equity securities	(129,933)	(559,284)	(40,128)
Commercial mortgage loans	(1,750,063)	(1,070,411)	(2,358,647)
Other investing activities	(7,683,976)	2,334,064	(4,535,715)
Net cash used in investing activities	(8,315,106)	(484,146)	(1,982,982)
Cash flows from financing activities:			
Policyholders' account balances:			
Deposits	22,633,929	21,009,161	21,854,967
Withdrawals	(23,106,380)	(21,972,929)	(17,948,260)
Net transfers to separate accounts	2,646,178	(224,991)	(5,406,328)
Net (payments on) proceeds from repurchase agreements	-	-	(411,857)
Net proceeds from (payments on) Federal Home Loan Bank notes	300,140	(600,070)	99,999
Net proceeds from (payments on) debt	16,096	22,393	(5,896)
Shares held in trust at cost, net	7,071	7,469	3,835
Capital contribution from Parent	86,612	100,000	-
Payment of cash dividends to Parent	(525,000)	(450,000)	(600,000)
Net cash provided by (used in) financing activities	2,058,646	(2,108,967)	(2,413,540)
Net (decrease) increase in cash and cash equivalents	(1,897,926)	2,123,779	352,893
Cash and cash equivalents, beginning of year	3,741,713	1,617,934	1,265,041
Cash and cash equivalents, end of year	$ 1,843,787	$ 3,741,713	$ 1,617,934
Supplemental Cash Flow Information			
Income tax paid (received)	$ 379,278	$ 35,413	$ (13,212)
Interest paid	$ 30,834	$ 32,995	$ 21,237

See accompanying Notes to Consolidated Financial Statements.

1. Business and Basis of Presentation

Jackson National Life Insurance Company (the "Company" or "Jackson") is wholly owned by Brooke Life Insurance Company ("Brooke Life" or the "Parent"), which is ultimately a wholly owned subsidiary of Prudential plc ("Prudential"), London, England. Jackson, together with its New York life insurance subsidiary, is licensed to sell group and individual annuity products (including immediate, index linked and deferred fixed annuities and variable annuities), guaranteed investment contracts ("GICs") and individual life insurance products, including variable universal life, in all 50 states and the District of Columbia.

The consolidated financial statements include accounts, after the elimination of intercompany accounts and transactions, of the following:

- Life insurers: Jackson and its wholly owned subsidiaries Jackson National Life Insurance Company of New York ("JNY"), Squire Reassurance Company LLC ("Squire Re"), Squire Reassurance Company II, Inc. ("Squire Re II"), VFL International Life Company SPC, LTD and Jackson National Life (Bermuda) LTD;
- Wholly owned broker-dealer, investment management and investment advisor subsidiaries: Jackson National Life Distributors, LLC, Jackson National Asset Management, LLC;
- PGDS (US One) LLC ("PGDS"), a wholly owned subsidiary that provides certain services to Jackson and certain affiliates;
- Other insignificant wholly owned subsidiaries; and
- Other insignificant partnerships, limited liability companies and variable interest entities ("VIEs") in which Jackson is deemed the primary beneficiary.

On August 15, 2017, National Planning Holdings, Inc. ("NPH"), Jackson's affiliated broker-dealer network, announced the sale of its broker-dealer business to LPL Financial LLC ("LPL"). In December 2018, the broker dealer's subsidiaries were consolidated into NPH, which was then contributed to Jackson by its parent, Brooke Life and, subsequently, converted to National Planning Holdings, LLC ("NPH LLC").

Basis of Presentation
The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). Intercompany accounts and transactions have been eliminated upon consolidation.

During 2019, the Company identified an error in the financial statements for the periods ending December 31, 2018 and 2017, related to a miscalculation in an actuarial model, as described below. Management reviewed the impact of the adjustment on these prior periods and determined, taken as a whole, it was immaterial to the prior periods impacted.

In 2017, the Company implemented a revised actuarial model for the valuation of reserves for variable annuity guaranteed benefits. In 2019, management identified a miscalculation in this revised model related to the effect of partial withdrawals on the guaranteed minimum death benefit rollup benefits, which resulted in an overstatement of reserves of $148.2 million and $104.8 million as of December 31, 2018 and 2017, respectively. The Company recorded an immaterial correction to the consolidated financial statements for December 31, 2018, by decreasing reserves for future policy benefits and claims payable by $148.2 million, as well as a resulting increase in deferred acquisition costs and deferred tax asset of $45.4 million and $21.6 million, respectively. As a result, net income increased by $22.7 million and $58.5 million for 2018 and 2017, respectively. The Company also adjusted the corresponding footnotes for 2018 and 2017, where applicable, for this correction.

The preparation of the consolidated financial statements in conformity with GAAP requires the use of estimates and assumptions about future events that affect the amounts reported in the consolidated financial statements and the accompanying notes. Significant estimates or assumptions, as further discussed in the notes, include: 1) valuation of investments and derivative instruments, including fair values of securities deemed to be in an illiquid market and the determination of when an impairment is other-than-temporary; 2) assessments as to whether certain entities are variable interest entities, the existence of reconsideration events and the determination of which party, if any, should consolidate the entity; 3) assumptions impacting estimated future gross profits, including but not limited to, policyholder behavior, mortality rates, expenses, investment returns and policy crediting rates, used in the calculation of amortization of deferred acquisition costs and deferred sales inducements; 4) assumptions used in calculating policy reserves and liabilities, including but not limited to, policyholder behavior, mortality rates, expenses, investment returns and policy crediting rates; 5) assumptions as to future earnings levels being sufficient to realize deferred tax benefits; 6) estimates related to

establishment of loan loss reserves, allowances on receivables, liabilities for lawsuits and state guaranty fund assessments; 7) assumptions and estimates associated with the Company's tax positions, including an estimate of the dividends received deduction, which impact the amount of recognized tax benefits recorded by the Company; 8) value of guaranteed benefits; and 9) value of business acquired, its recoverability and amortization. These estimates and assumptions are based on management's best estimates and judgments. Management evaluates its estimates and assumptions on an ongoing basis using historical experience and other factors deemed appropriate. As facts and circumstances dictate, these estimates and assumptions may be adjusted. Since future events and their effects cannot be determined with precision, actual results could differ significantly from these estimates. Changes in estimates, including those resulting from continuing changes in the economic environment, will be reflected in the consolidated financial statements in the periods the estimates are changed.

2. Summary of Significant Accounting Policies

Changes in Accounting Principles – Adopted in Current Year

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, "Leases (Topic 842)," which established a new accounting model for leases. Lessees are required to recognize most leases on the balance sheet as a right-of-use asset and a related lease liability. The lease liability is measured as the present value of the lease payments over the lease term with the right-of-use asset measured at the lease liability amount and adjusted for certain lease incentives and initial direct costs. Lease expense recognition continues to differentiate between finance leases and operating leases resulting in a similar pattern of lease expense recognition as under previous guidance. Effective January 1, 2019, the Company adopted ASU 2016-02 and all related amendments utilizing the effective date transition method with a cumulative effect adjustment recorded as of the beginning of the year. The Company elected the practical expedient to combine lease and non-lease components for certain real estate leases. As permitted by ASU 2016-02, the Company did not reassess whether existing contracts contain a lease under the new definition of a lease, did not change the lease classification for existing leases, and did not reassess whether initial indirect costs for existing leases would qualify for capitalization under the new guidance. The adoption of ASU 2016-02 did not have a material impact on the Company's consolidated financial statements, but did result in additional disclosures related to leases.

In August 2017, the FASB issued ASU No. 2017-12, "Derivatives and Hedging – Targeted Improvements to Accounting for Hedging Activities," which changed the recognition and presentation requirements of hedge accounting. Effective January 1, 2019, the Company adopted ASU No. 2017-12 with no impact on the Company's consolidated financial statements.

In March 2017, the FASB issued ASU No. 2017-08, "Receivables – Nonrefundable Fees and Other Costs: Premium Amortization on Purchased Callable Debt Securities," which required that certain premiums on callable debt securities be amortized to the earliest call date. Effective January 1, 2019, the Company adopted ASU No. 2017-08 with no impact on the Company's consolidated financial statements.

Changes in Accounting Principles – Issued but Not Yet Adopted

In August 2018, the FASB issued ASU No. 2018-15, "Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract," which align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. ASU No. 2018-15 is effective for fiscal years beginning after December 15, 2019 and can be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. Early adoption is permitted. The adoption of ASU No. 2018-15 is not expected to have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, "Changes to the Disclosure Requirements for Fair Value Measurements," which modifies the disclosure requirements on fair value measurements. ASU No. 2018-13 is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted, with the option to early adopt any removed or modified disclosures while delaying adoption of the new disclosures until the effective date. Certain amendments are required to be applied prospectively for only the most recent annual period presented, where other amendments are to be applied retrospectively to all periods presented. Upon adoption in 2020, the Company will revise the impacted disclosures within the Company's consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-12, "Targeted Improvements to the Accounting for Long Duration Contracts," which includes changes to the existing recognition, measurement, presentation and disclosure requirements for long-duration contracts issued by an insurance entity. The amendments in this Update contain four significant changes: 1) For the calculation of the liability for future policy benefits of nonparticipating traditional and limited-payment insurance and reinsurance contracts, cash flow assumptions and discount rates will be required to be updated at least annually; 2) Market risk benefits, a new term for certain contracts or features that provide for potential benefits in addition to the account balance which exposes the insurer to other than nominal market risk, will be measured at fair value; 3) deferred acquisition costs ("DAC") will be amortized on a constant-level basis, independent of profitability; and 4) enhanced disclosures, including quantitative information in rollforwards for balance sheet accounts, as well as information about significant inputs, judgments, assumptions and methods used in measurement will be required. ASU No. 2018-12 is effective for fiscal years beginning after December 15, 2021, with required retrospective application to January 1, 2020. Early adoption is permitted. The Company has begun its implementation efforts and is currently assessing the impact of the new guidance. Given the nature and extent of the required changes, the adoption of this standard is expected to have a significant impact on the Company's consolidated financial statements and disclosures. In addition to the initial balance sheet impact upon adoption, the Company also expects a change in the pattern of future profit emergence.

In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments – Credit Losses: Measurement of Credit Losses on Financial Instruments," which provides a new current expected credit loss ("CECL") model to account for credit losses on certain financial assets and off-balance sheet exposures. The model requires an entity to estimate lifetime credit losses related to such financial assets and exposures based on relevant information about past events, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. The guidance also modifies the current other-than-temporary impairment guidance for available-for-sale debt securities to require the use of an allowance rather than a direct write down of the investment and replaces existing guidance for purchased credit deteriorated loans and debt securities. The guidance also requires enhanced disclosures. ASU No. 2016-13 is effective for public entities that meet the definition of an SEC filer for annual reporting periods beginning after December 15, 2019. As of December 31, 2019, the Company estimates the commercial mortgage and other loan CECL allowance to be a reduction in opening retained earnings by approximately $60 - $85 million on a pre-tax basis. The ultimate impact of adoption is dependent upon changes in the outstanding balance and composition of the investment portfolio, macroeconomic conditions, and reasonable and supportable forecasts of those macroeconomic conditions used within the credit loss models. Further validation of the models could also impact the balance sheet adjustment upon implementation. While the final methodology for the reinsurance receivable CECL allowance is still under development, the allowance is not expected to be material. The Company plans to adopt the standard on its effective date of January 1, 2020, with a cumulative effect adjustment to retained earnings.

Comprehensive Income

Comprehensive income includes all changes in stockholder's equity (except those arising from transactions with owners/stockholders) and, in the Company's case, includes net income and net unrealized gains or losses on available for sale debt securities.

Investments

Debt securities consist primarily of bonds, notes, and asset-backed securities. Acquisition discounts and premiums on debt securities are amortized into investment income through call or maturity dates using the effective interest method. Discounts and premiums on asset-backed securities are amortized over the estimated redemption period. Certain asset-backed securities are considered to be other than high quality or otherwise deemed to be high-risk, meaning the Company might not recover substantially all of its recorded investment due to unanticipated prepayment events. For these securities, changes in investment yields due to changes in estimated future cash flows are accounted for on a prospective basis. The carrying value of such securities was $220.1 million and $291.6 million as of December 31, 2019 and 2018, respectively.

Debt securities are generally classified as available for sale and are carried at fair value. For declines in fair value considered to be other-than-temporary, an impairment charge reflecting the difference between the amortized cost basis and fair value is included in net realized losses on investments. If management believes the Company does not intend to sell the security and is not more likely than not to be required to sell the security prior to recovery of its amortized cost basis, an amount representing the non-credit related portion of a loss is reclassified out of net realized losses on investments and into other comprehensive income. In determining whether an other-than-temporary impairment has

occurred, and in calculating the non-credit related component of the total impairment loss, the Company considers a number of factors, which are further described in Note 3.

Equity securities include common stocks, preferred stocks, mutual funds, and limited partnerships. Carrying values for limited partnership investments are generally determined by using the proportion of the Company's investment in each fund (Net Asset Value ("NAV") equivalent) as a practical expedient for fair value. All equity securities are carried at fair value with changes in value included in net investment income.

Commercial mortgage loans are carried at the aggregate unpaid principal balance, adjusted for any applicable unamortized discount or premium, impairments or allowance for loan losses. Acquisition discounts and premiums on commercial mortgage loans are amortized into investment income through maturity dates using the effective interest method.

On a periodic basis, the Company assesses the commercial mortgage loan portfolio for the need for an allowance for loan losses. In determining its allowance for loan losses, the Company evaluates each loan to determine if it is probable that amounts due according to the contractual terms of the loan agreement will not be collected. The allowance includes loan specific reserves for loans that are determined to be non-performing as a result of this loan review process and a portfolio reserve for probable incurred but not specifically identified losses for performing loans. The loan specific portion of the loss allowance is based on the Company's assessment as to ultimate collectability of loan principal and interest, or other value expected in lieu of loan principal and interest. This review contemplates a variety of factors which may include, but are not limited to, current economic conditions, the physical condition of the property, the financial condition of the borrower, and the near and long-term prospects for change in these conditions. In determining the portfolio reserve for incurred but not specifically identified losses, Jackson considers the current credit composition of the portfolio based on the results of its loan modeling analysis, which considers property type, default statistics, historical losses and other relevant factors to determine probability of default and other default loss estimates. Model assumptions are updated each quarter and, based upon actual loan experience, are considered together with other relevant qualitative factors in making the final portfolio reserve calculations. The valuation allowance for commercial mortgage loans can increase or decrease from period to period based on these factors. Changes in the allowance for loan losses are recorded in net investment income.

Separately, the Company also reviews individual loans in the portfolio for impairment based on an assessment of the factors identified above. Impairment charges recognized are recorded initially against the established loan loss allowance and, if necessary, any additional amounts are recorded as realized losses. As deemed necessary based on cash flow expectations and other factors, Jackson may place loans on non-accrual status. In this case, all cash received is applied against the carrying value of the loan.

Policy loans are loans the Company issues to contract holders that use the cash surrender value of their life insurance policy or annuity contract as collateral. The Company elected the fair value option upon acquisition of policy loans held as collateral for reinsurance, further described below. At December 31, 2019 and 2018, $3.6 billion and $3.5 billion, respectively, of these loans were carried at fair value, which the Company believes is equal to the unpaid principal balances plus accrued investment income. At December 31, 2019 and 2018, the Company had $1.1 billion and $1.2 billion respectively, of policy loans not held as collateral for reinsurance, which were carried at the unpaid principal balances.

Other invested assets primarily include investments in Federal Home Loan Bank capital stock and real estate. Federal Home Loan Bank capital stock is carried at cost and adjusted for any impairment. Real estate is carried at the lower of depreciated cost or fair value.

The Company's involvement with variable interest entities ("VIEs") is primarily to invest in assets that gain exposure to a broadly diversified portfolio of asset classes. A VIE is an entity that does not have sufficient equity to finance the activities of the entity without additional subordinated financial support, or where investors lack certain characteristics of a controlling financial interest. The Company performs ongoing qualitative assessments of variable interests in VIEs to determine whether it has a controlling financial interest and would, therefore, be considered the primary beneficiary of the VIE. If the Company determines it is the primary beneficiary of a VIE, it consolidates the assets and liabilities of the VIE in its consolidated financial statements.

Realized gains and losses on sales of investments are recognized in income at the date of sale and are determined using the specific cost identification method.

The Company elected the fair value option for certain assets which are held as collateral for reinsurance, as further described below. Accordingly, the Company established a funds held liability, for which the Company also elected the fair value option. The value of the funds held liability is equal to the fair value of the assets held as collateral. The income and any changes in unrealized gains and losses on these assets and the corresponding funds held liability are included in net investment income and have no impact on the Company's consolidated income statements.

The changes in unrealized gains and losses on certain investments that are classified as available for sale and the non-credit related portion of other-than-temporary impairment charges are excluded from net income and included as a component of other comprehensive income and total equity, net of tax and the effect of the adjustment for deferred acquisition costs and deferred sales inducements. The changes in unrealized gains and losses on investments for which Jackson elected the fair value option are included in net investment income.

Derivative Instruments and Embedded Derivatives

The Company enters into financial derivative transactions, including, but not limited to, swaps, put-swaptions, futures and options to reduce and manage business risks. These transactions manage the risk of a change in the value, yield, price, cash flows, credit quality or degree of exposure with respect to assets, liabilities or future cash flows which the Company has acquired or incurred. The Company manages the potential credit exposure for over-the-counter derivative contracts through careful evaluation of the counterparty credit standing, collateral agreements, and master netting agreements. The Company is exposed to credit-related losses in the event of nonperformance by counterparties, however, it does not anticipate nonperformance. There were no charges due to nonperformance by derivative counterparties in 2019, 2018, or 2017.

The Company generally uses freestanding derivative instruments for hedging purposes. Additionally, certain liabilities, primarily trust instruments supported by funding agreements, fixed index annuities and guarantees offered in connection with variable annuities issued by the Company, may contain embedded derivatives. Further details regarding Jackson's derivative positions are included in Note 4. The Company generally does not account for freestanding derivatives as either fair value or cash flow hedges as might be permitted if specific hedging documentation requirements were followed. Financial derivatives, including derivatives embedded in certain host liabilities that have been separated for accounting and financial reporting purposes, are carried at fair value. The results from freestanding derivative instruments and embedded derivatives, including net payments, realized gains and losses and changes in value, are reported in net income, as further detailed in Note 4.

Cash and Cash Equivalents

Cash and cash equivalents primarily include money market instruments and bank deposits.

Fair Value Measurement

Fair value measurements are based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's view of market assumptions in the absence of observable market information. The Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs. All financial assets and liabilities measured at fair value are required to be classified into one of the following categories:

Level 1 Observable inputs that reflect quoted prices for identical assets or liabilities in active markets that the Company has the ability to access at the measurement date. Level 1 securities include U.S. Treasury securities and exchange traded equity securities and derivative instruments.

Level 2 Observable inputs, other than quoted prices included in Level 1, for the asset or liability or prices for similar assets and liabilities. Most debt securities that are model priced using observable inputs are classified within Level 2. Also included are freestanding and embedded derivative instruments that are priced using models with observable market inputs.

Level 3 Valuations that are derived from techniques in which one or more of the significant inputs are unobservable (including assumptions about risk). Embedded derivatives that are valued using unobservable inputs are included in Level 3. Because Level 3 fair values, by their nature, contain unobservable market inputs, considerable judgment may be used to determine the Level 3 fair values. Level 3 fair values represent the Company's best estimate of an amount that could be realized in a current market exchange absent actual market exchanges.

In many situations, inputs used to measure the fair value of an asset or liability may fall into different levels of the fair value hierarchy. In these situations, the Company determines the level in which the fair value falls based upon the lowest level input that is significant to the determination of the fair value. As a result, both observable and unobservable inputs may be used in the determination of fair values that the Company has classified within Level 3.

The Company determines the fair values of certain financial assets and liabilities based on quoted market prices, where available. The Company may also determine fair value based on estimated future cash flows discounted at the appropriate current market rate. When appropriate, fair values reflect adjustments for counterparty credit quality, the Company's credit standing, liquidity and risk margins on unobservable inputs.

Where quoted market prices are not available, fair value estimates are made at a point in time, based on relevant market data, as well as the best information about the individual financial instrument. At times, illiquid market conditions may result in inactive markets for certain of the Company's financial instruments. In such instances, there may be no or limited observable market data for these assets and liabilities. Fair value estimates for financial instruments deemed to be in an illiquid market are based on judgments regarding current economic conditions, liquidity discounts, currency, credit and interest rate risks, loss experience and other factors. These fair values are estimates and involve considerable uncertainty and variability as a result of the inputs selected and may differ materially from the values that would have been used had an active market existed. As a result of market inactivity, such calculated fair value estimates may not be realizable in an immediate sale or settlement of the instrument. In addition, changes in the underlying assumptions used in the fair value measurement technique could significantly affect these fair value estimates.

Refer to Note 5 for further discussion of the methodologies used to determine fair values of the Company's financial instruments.

Deferred Acquisition Costs
Under current accounting guidance, certain costs that are directly related to the successful acquisition of new or renewal insurance business can be capitalized as deferred acquisition costs. These costs primarily pertain to commissions and certain costs associated with policy issuance and underwriting. All other acquisition costs are expensed as incurred.

Deferred acquisition costs are increased by interest thereon and amortized into income in proportion to anticipated premium revenues for traditional life policies and in proportion to estimated gross profits, including realized gains and losses and derivative movements, for annuities and interest-sensitive life products. Due to volatility of certain factors that affect gross profits, including realized capital gains and losses and derivative movements, amortization may be a benefit or a charge in any given period. In the event of negative amortization, the related deferred acquisition cost balance is capped at the initial amount capitalized, plus interest. Unamortized deferred acquisition costs are written off when a contract is internally replaced and substantially changed.

As certain available for sale debt securities are carried at fair value, an adjustment is made to deferred acquisition costs equal to the change in amortization that would have occurred if such securities had been sold at their stated fair value and the proceeds reinvested at current yields. This adjustment, along with the change in net unrealized gains (losses) on available for sale debt securities, net of applicable tax, is credited or charged directly to equity as a component of other comprehensive income. At December 31, 2019 and 2018, deferred acquisition costs decreased by $573.8 million and $26.6 million, respectively, to reflect this adjustment.

For variable annuity business, the Company employs a mean reversion methodology that is applied with the objective of adjusting the amortization of deferred acquisition costs that would otherwise be highly volatile due to fluctuations in the level of future gross profits arising from changes in equity market levels. The mean reversion methodology achieves this objective by applying a dynamic adjustment to the assumption for short-term future investment returns. Under this methodology, the projected returns for the next five years are set such that, when combined with the actual returns for the

current and preceding two years, the average rate of return over the eight-year period is 7.4% for both 2019 and 2018, after investment management fees. The mean reversion methodology does, however, include a cap and a floor of 15% and 0% per annum, respectively, on the projected return for each of the next five years. At December 31, 2019 and 2018, projected returns under mean reversion were within the range bound by the 15% cap and 0% floor. At December 31, 2019 and 2018, projected returns after the next five years were set at 7.4%.

Deferred acquisition costs are reviewed periodically to ensure that the unamortized portion does not exceed the expected recoverable amounts. Any amount deemed unrecoverable is written off with a charge through deferred acquisition costs amortization. No such write-offs were required for 2019, 2018, and 2017.

Deferred Sales Inducements

Under current accounting guidance, certain sales inducement costs that are directly related to the successful acquisition of new or renewal insurance business can be capitalized as deferred sales inducement costs. Bonus interest on deferred fixed annuities and contract enhancements on fixed index annuities and variable annuities are capitalized as deferred sales inducements and included in other assets. Deferred sales inducements are increased by interest thereon and amortized into income in proportion to estimated gross profits, including realized capital gains and losses and derivative movements. Due to volatility of certain factors that affect gross profits, including realized capital gains and losses and derivative movements, amortization may be a benefit or a charge in any given period. In the event of negative amortization, the related deferred sales inducements balance is capped at the initial amount capitalized, plus interest. Unamortized deferred sales inducements are written off when a contract is internally replaced and substantially changed.

As certain available for sale debt securities are carried at fair value, an adjustment is made to deferred sales inducements equal to the change in amortization that would have occurred if such securities had been sold at their stated fair value and the proceeds reinvested at current yields. This adjustment, along with the change in net unrealized gains (losses) on available for sale debt securities, net of applicable tax, is credited or charged directly to equity as a component of other comprehensive income. At December 31, 2019 and 2018, deferred sales inducements decreased by $88.6 million and $8.7 million, respectively, to reflect this adjustment.

For variable annuity business, the Company employs the same mean reversion methodology as is employed for deferred acquisition costs as described above.

Deferred sales inducements are reviewed periodically to ensure that the unamortized portion does not exceed the expected recoverable amounts. Any amount deemed unrecoverable is written off with a charge through deferred sales inducements amortization. No such write-offs were required for 2019, 2018, and 2017.

Actuarial Assumption Changes (Unlocking)

Annually, or as circumstances warrant, the Company conducts a comprehensive review of the assumptions used for its estimates of future gross profits underlying the amortization of deferred acquisition costs and deferred sales inducements, as well as the valuation of the embedded derivatives and reserves for life insurance and annuity products with living benefit and death benefit guarantees. These assumptions include, but may not be limited to, policyholder behavior, mortality rates, expenses, investment returns and policy crediting rates. Based on this review, the cumulative balances of deferred acquisition costs, deferred sales inducements and life and annuity guaranteed benefit reserves are adjusted with a corresponding benefit or charge to net income. Additionally, in 2017, the Company implemented an enhancement to the method for incorporating own credit risk in the discounting of embedded derivative cash flows. The impact of the enhancement reduced reserves by $558.0 million, net of deferred acquisition costs.

Reinsurance and Funds Held Under Reinsurance Treaties

The Company enters into assumed and ceded reinsurance agreements with other companies in the normal course of business. Ceded reinsurance agreements are reported on a gross basis on the Company's consolidated balance sheets as an asset for amounts recoverable from reinsurers or as a component of other assets or liabilities for amounts, such as premiums, owed to or due from reinsurers. Reinsurance assumed and ceded premiums and benefits paid or provided are accounted for on bases consistent with those used in accounting for the original policies issued and the terms of the reinsurance contracts. Premium income and benefit expenses are reported net of reinsurance assumed and ceded.

The Company has three retrocession reinsurance agreements ("retro treaties") with Swiss Reinsurance Company Ltd. ("SRZ"). Pursuant to these retro treaties, the Company ceded to SRZ on a 100% coinsurance basis, subject to pre-existing reinsurance with other parties, certain blocks of business.

As a result of these retro treaties, the Company holds certain assets, primarily in the form of policy loans and debt securities, as collateral for the reinsurance recoverable. Investment income and realized gains or losses earned on assets held as collateral are paid by the Company to SRZ, pursuant to the terms of the treaties. Investment income and realized gains and losses are reported net of investment income and realized gains and losses on funds held under reinsurance treaties, with no net impact on the Company's consolidated income statements.

The income credited to SRZ on the funds held for the retro treaties is based on the income earned on those assets, which results in an embedded derivative (total return swap). However, the Company elected the fair value option for the funds held liability, which is carried at fair value with changes in fair value reported in net investment income. Accordingly, the embedded derivative is not bifurcated or separately valued.

Receivables from Affiliates

Effective December 30, 2016, the Company executed a reserve financing transaction, whereby, for statutory reporting, the risk on $319.0 million of statutory basis redundant term life reserves was transferred to a third-party reinsurer. In conjunction with the transaction, Squire Re II financed the excess reserves through a surplus note (the "Squire Surplus Note") issued to an affiliate, Brier Capital LLC ("Brier"), in return for a note receivable from Brier (the "Financing Note"). Quarterly interest payments due under the Financing Note and the Squire Surplus Note are offset against each other and only the net amounts are due. The outstanding principal on the Financing Note and the Squire Surplus Note, each initially $344.0 million, are expected to increase or decrease in relation to changes in the excess reserves financed. The Financing Note, reported in Receivables from Affiliates, matures December 30, 2031 and bears interest at 4.00%. The outstanding balance of both the Financing Note and the Squire Surplus Note was $247.8 million and $283.8 million at December 31, 2019 and 2018, respectively.

Jackson provides a revolving credit facility to Jackson Holdings, LLC, an upstream holding company. The outstanding balance at both December 31, 2019 and 2018 was nil.

Value of Business Acquired

The Company has an intangible asset representing the value of business acquired ("VOBA"), which is included in other assets. In connection with the acquisition of insurance policies and investment contracts in the acquisition of a business, a portion of the purchase price is assigned to the right to receive future gross profits from the acquired insurance policies and investment contracts. This intangible asset, or VOBA, represents the actuarially estimated present value of future cash flows from the acquired policies. The Company established a VOBA intangible asset for previously acquired traditional life insurance products and deferred annuity contracts. This intangible asset is amortized over the life of the business, which approximates 20 years. The unamortized VOBA balance is subject to recoverability testing at the end of each reporting period to ensure that the balance does not exceed the present value of anticipated gross profits.

Income Taxes

The Company files income tax returns with the U.S. federal government and various state and local jurisdictions, as well as certain foreign jurisdictions.

Jackson files a consolidated federal income tax return with Brooke Life, Jackson National Life Insurance Company of New York and, Squire Re II. Jackson National Life (Bermuda) LTD and VFL International Life Company SPC, LTD are taxed as controlled foreign corporations of Jackson. With the exception of several insignificant wholly owned subsidiaries that are not included in the Jackson consolidated tax return, all other subsidiaries are limited liability companies with all of their interests owned by Jackson. Accordingly, they are not considered separate entities for income tax purposes and, therefore, are taxed as part of the operations of Jackson. Income tax expense is the amount calculated on a separate company basis.

Deferred federal income taxes arise from the recognition of temporary differences between the basis of assets and liabilities determined for financial reporting purposes and the basis determined for income tax purposes. Such temporary differences are principally related to the effects of recording certain invested assets at market value, the deferral of acquisition costs and sales inducements and the provisions for future policy benefits and expenses. Deferred tax assets

and liabilities are measured using the tax rates expected to be in effect when such benefits are realized. Jackson is required to test the value of deferred tax assets for realizability. Deferred tax assets are reduced by a valuation allowance if, based on the weight of available positive and negative evidence, it is more likely than not that some portion, or all, of the deferred tax assets will not be realized. In determining the need for a valuation allowance, the Company considers the carryback eligibility of losses, reversal of existing temporary differences, estimated future taxable income and tax planning strategies.

The determination of the valuation allowance for Jackson's deferred tax assets requires management to make certain judgments and assumptions regarding future operations that are based on historical experience and expectations of future performance. In order to recognize a tax benefit in the consolidated financial statements, there must be a greater than fifty percent chance of success of the Company's position being sustained by the relevant taxing authority with regard to that tax position. Management's judgments are potentially subject to change given the inherent uncertainty in predicting future performance, which is impacted by such factors as policyholder behavior, competitor pricing and other specific industry and market conditions.

The Company recognizes accrued interest and penalties, if any, related to unrecognized tax benefits as a component of tax expense.

Reserves for Future Policy Benefits and Claims Payable and Other Contract Holder Funds
For traditional life insurance contracts, which include term and whole life, reserves for future policy benefits are determined using the net level premium method and assumptions as of the issue date or acquisition date as to mortality, interest, persistency and expenses, plus provisions for adverse deviations. These assumptions are not unlocked unless the reserve is determined to be deficient. Interest rate assumptions range from 2.5% to 6.0%. Lapse, mortality, and expense assumptions for recoverability are based primarily on Company experience. The Company's liability for future policy benefits also includes net liabilities for guaranteed benefits related to certain nontraditional long-duration life and annuity contracts, which are further discussed in Note 9.

Group payout annuities consist of a closed block of defined benefit annuity plans. The liability for future benefits for these limited payment contracts is calculated using assumptions as of the acquisition date as to mortality and expense plus provisions for adverse deviation.

In conjunction with a prior acquisition, the Company recorded a fair value adjustment related to certain annuity and interest sensitive liability blocks of business to reflect the cost of the interest guarantees within the inforce liabilities, based on the difference between the guaranteed interest rate and an assumed new money guaranteed interest rate. This adjustment was recorded in reserves for future policy benefits and claims payable. This component of the acquired reserves is reassessed at the end of each period, taking into account changes in the inforce block. Any resulting change in the reserve is recorded as a change in policy reserve through the consolidated income statements.

For the Company's interest-sensitive life contracts, liabilities approximate the policyholder's account value, plus the remaining balance of the fair value adjustment related to previously acquired business. For fixed deferred annuities, the liability is the policyholder's account value, plus the unamortized balance of the above mentioned fair value adjustment. For the fixed option on variable annuities, guaranteed investment contracts and other investment contracts, the liability is the policyholder's account value. The liability for fixed index annuities is based on three components, 1) the imputed value of the underlying guaranteed host contract, 2) the fair value of the embedded option component of the contract and 3) the liability for guaranteed benefits related to the optional lifetime income rider.

The Company has formed both a special purpose vehicle and a statutory business trust, solely for the purpose of issuing Medium Term Note instruments to institutional investors, the proceeds of which are deposited with the Company and secured by the issuance of funding agreements.

Those Medium Term Note instruments issued in a foreign currency have been economically hedged for changes in exchange rates using cross-currency swaps. The fair value of derivatives embedded in funding agreements, including unrealized foreign currency gains and losses, are included in the carrying value of the trust instruments supported by funding agreements.

Trust instrument liabilities are adjusted to reflect the effects of foreign currency gains and losses using exchange rates as of the reporting date. Foreign currency gains and losses are included in other net investment losses.

Jackson and Squire Re are members of the Federal Home Loan Bank of Indianapolis ("FHLBI") primarily for the purpose of participating in the bank's mortgage-collateralized loan advance program with short-term and long-term funding facilities. Members are required to purchase and hold a minimum amount of FHLBI capital stock, plus additional stock based on outstanding advances. Advances are in the form of short-term or long-term notes or funding agreements issued to FHLBI.

The Company's institutional products business is comprised of the guaranteed investment contracts, funding agreements and FHLBI funding agreement advances described above.

Contingent Liabilities

The Company is a party to legal actions and, at times, regulatory investigations. Given the inherent unpredictability of these matters, it is difficult to estimate their impact on the Company's financial position. A reserve is established for contingent liabilities if it is probable that a loss has been incurred and the amount is reasonably estimable. It is possible that an adverse outcome in certain of the Company's contingent liabilities, or the use of different assumptions in the determination of amounts recorded, could have a material effect upon the Company's financial position. However, it is the opinion of management that the ultimate disposition of contingent liabilities is unlikely to have a material adverse effect on the Company's financial position.

Separate Account Assets and Liabilities

The Company maintains separate account assets, which are reported at fair value. The related liabilities are reported at an amount equivalent to the separate account assets. At December 31, 2019 and 2018, the assets and liabilities associated with variable life and annuity contracts were $195.1 billion and $163.3 billion, respectively. Investment risks associated with market value changes are borne by the contract holders, except to the extent of minimum guarantees made by the Company. Refer to Note 9 for additional information regarding the Company's contractual guarantees. Separate account net investment income, net investment realized and unrealized gains and losses, and the related liability changes are offset within the same line item in the consolidated income statements. Amounts assessed against the contract holders for mortality, variable annuity benefit guarantees, administrative, and other services are reported in revenue as fee income.

Included in the above mentioned assets and liabilities is a Company issued group variable annuity contract designed for use in connection with and issued to the Company's Defined Contribution Retirement Plan. These deposits are allocated to the Jackson National Separate Account – II, which had balances of $316.3 million and $251.6 million at December 31, 2019 and 2018, respectively. The Company receives administrative fees for managing the funds. These fees are recorded as earned and included in fee income in the consolidated income statements.

Debt

Liabilities for the Company's debt are primarily carried at an amount equal to the unpaid principal balance. Original issuance discount or premium and any debt issue costs, if applicable, are recognized as a component of interest expense over the period the debt is expected to be outstanding. Refer to Note 10 for further information regarding the Company's debt.

Share-Based Compensation

As more fully described in Note 14, the Company has certain share award plans that are either equity settled or liability settled. The Company recognizes compensation expense based on a grant-date award fair value, ratably over the requisite service period of each individual grant, which generally equals the vesting period. Additional compensation expense is recognized based on the change in fair value of the award at the end of each reporting period.

Revenue and Expense Recognition

Premiums for traditional life insurance are reported as revenues when due. Benefits, claims and expenses are associated with earned revenues in order to recognize profit over the lives of the contracts. This association is accomplished through provisions for future policy benefits and the deferral and amortization of certain acquisition costs.

Deposits on interest-sensitive life products and investment contracts, principally deferred annuities and guaranteed investment contracts, are treated as policyholder deposits and excluded from revenue. Revenues consist primarily of

investment income and charges assessed against the account value for mortality charges, surrenders, variable annuity benefit guarantees and administrative expenses. Fee income also includes revenues related to asset management fees and certain service fees. Surrender benefits are treated as repayments of the policy holder account. Annuity benefit payments are treated as reductions to the policyholder account. Death benefits in excess of the policyholder account are recognized as an expense when incurred. Expenses consist primarily of the interest credited to policyholder deposits. Underwriting and other direct acquisition expenses are associated with gross profit in order to recognize profit over the life of the business. This is accomplished through deferral and amortization of acquisition costs and sales inducements. Expenses not related to policy acquisition are recognized when incurred.

Investment income is not accrued on securities in default and otherwise where the collection is uncertain. In these cases, receipts of interest on such securities are used to reduce the cost basis of the securities.

Subsequent Events
The Company has evaluated events through March 5, 2020, which is the date the consolidated financial statements were available to be issued.

3. Investments

Investments are comprised primarily of fixed-income securities and loans, primarily publicly-traded corporate and government bonds, asset-backed securities and commercial mortgage loans. Asset-backed securities include mortgage-backed and other structured securities. The Company generates the majority of its general account deposits from interest-sensitive individual annuity contracts, life insurance products and guaranteed investment contracts on which it has committed to pay a declared rate of interest. The Company's strategy of investing in fixed-income securities and loans aims to ensure matching of the asset yield with the amounts credited to the interest-sensitive liabilities and to earn a stable return on its investments.

Debt Securities
The following table sets forth the composition of the fair value of debt securities at December 31, 2019, classified by rating categories as assigned by nationally recognized statistical rating organizations (“NRSRO”), the National Association of Insurance Commissioners (“NAIC”), or if not rated by such organizations, the Company’s affiliated investment advisor. At December 31, 2019, the carrying value of investments rated by the Company’s affiliated investment advisor totaled $310.0 million. For purposes of the table, if not otherwise rated higher by a NRSRO, NAIC Class 1 investments are included in the A rating; Class 2 in BBB; Class 3 in BB and Classes 4 through 6 in B and below.

Investment Rating	Percent of Total Debt Securities Carrying Value December 31, 2019
AAA	20.2%
AA	7.2%
A	37.5%
BBB	33.3%
Investment grade	98.2%
BB	1.2%
B and below	0.6%
Below investment grade	1.8%
Total debt securities	100.0%

At December 31, 2019, based on ratings by NRSROs, of the total carrying value of debt securities in an unrealized loss position, 82% were investment grade, 3% were below investment grade and 15% were not rated. Unrealized losses on debt securities that were below investment grade or not rated were approximately 43% of the aggregate gross unrealized losses on available for sale debt securities.

Corporate securities in an unrealized loss position were diversified across industries. As of December 31, 2019, the industries accounting for the largest percentage of unrealized losses included consumer goods (23% of corporate gross

unrealized losses) and energy (20%). The largest unrealized loss related to a single corporate obligor was $1.3 million at December 31, 2019.

At December 31, 2019 and 2018, the amortized cost, gross unrealized gains and losses, fair value and non-credit other-than-temporary impairment ("OTTI") of available for sale debt securities, including $151.1 million and $170.4 million in securities carried at fair value under the fair value option, were as follows (in thousands):

December 31, 2019	Amortized Cost [1]	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Non-credit OTTI [2]
Debt Securities					
U.S. government securities	$ 5,709,013	$ 427,441	$ 705	$ 6,135,749	$ -
Other government securities	1,601,199	140,134	50	1,741,283	-
Public utilities	6,150,362	602,251	2,348	6,750,265	-
Corporate securities	34,225,801	2,141,339	16,759	36,350,381	-
Residential mortgage-backed	989,312	60,476	1,543	1,048,245	(24,042)
Commercial mortgage-backed	2,948,412	101,447	3,461	3,046,398	205
Other asset-backed securities	1,881,053	30,040	9,392	1,901,701	(10,824)
Total debt securities	$ 53,505,152	$ 3,503,128	$ 34,258	$ 56,974,022	$ (34,661)

December 31, 2018	Amortized Cost [1]	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Non-credit OTTI [2]
Debt Securities					
U.S. government securities	$ 5,713,656	$ 15	$ 238,888	$ 5,474,783	$ -
Other government securities	1,471,357	23,590	13,771	1,481,176	-
Public utilities	5,833,462	165,615	80,865	5,918,212	-
Corporate securities	34,815,946	369,043	778,917	34,406,072	-
Residential mortgage-backed	770,697	51,257	8,152	813,802	(25,221)
Commercial mortgage-backed	2,469,784	14,633	33,449	2,450,968	205
Other asset-backed securities	1,313,498	19,581	12,735	1,320,344	(10,824)
Total debt securities	$ 52,388,400	$ 643,734	$ 1,166,777	$ 51,865,357	$ (35,840)

[1] Amortized cost, apart from the carrying value for securities carried at fair value under the fair value option.

[2] Represents the amount of non-credit OTTI gains (losses) recognized in other comprehensive income on securities for which credit impairments have been recorded.

The amortized cost, gross unrealized gains and losses, and fair value of debt securities at December 31, 2019, by contractual maturity, are shown below (in thousands). Actual maturities may differ from contractual maturities where securities can be called or prepaid with or without early redemption penalties.

	Amortized [(1)] Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Due in 1 year or less	$ 2,147,068	$ 20,914	$ 310	$ 2,167,672
Due after 1 year through 5 years	12,189,795	499,737	1,084	12,688,448
Due after 5 years through 10 years	18,378,278	1,139,060	11,199	19,506,139
Due after 10 years through 20 years	6,980,513	772,931	3,817	7,749,627
Due after 20 years	7,990,721	878,523	3,452	8,865,792
Residential mortgage-backed	989,312	60,476	1,543	1,048,245
Commercial mortgage-backed	2,948,412	101,447	3,461	3,046,398
Other asset-backed securities	1,881,053	30,040	9,392	1,901,701
Total	$ 53,505,152	$ 3,503,128	$ 34,258	$ 56,974,022

(1) Amortized cost, apart from the carrying value for securities carried at fair value under the fair value option.

Securities with a carrying value of $117.5 million and $107.1 million at December 31, 2019 and 2018, respectively, were on deposit with regulatory authorities, as required by law in various states in which business is conducted.

At December 31, 2019 and 2018, debt securities include $151.1 million and $170.4 million, respectively, held in trust pursuant to the retro treaties with SRZ.

Residential mortgage-backed securities ("RMBS") include certain RMBS, which are collateralized by residential mortgage loans and are neither explicitly nor implicitly guaranteed by U.S. government agencies ("non-agency RMBS"). The Company's non-agency RMBS include investments in securities backed by prime, Alt-A, and subprime loans as follows (in thousands):

December 31, 2019	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Prime	$ 320,795	$ 13,079	$ 101	$ 333,773
Alt-A	89,357	24,975	20	114,312
Subprime	80,086	13,008	53	93,041
Total non-agency RMBS	$ 490,238	$ 51,062	$ 174	$ 541,126

December 31, 2018	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Prime	$ 211,848	$ 10,386	$ 988	$ 221,246
Alt-A	110,207	22,710	297	132,620
Subprime	110,602	12,170	365	122,407
Total non-agency RMBS	$ 432,657	$ 45,266	$ 1,650	$ 476,273

The Company defines its exposure to non-agency residential mortgage loans as follows. Prime loan-backed securities are collateralized by mortgage loans made to the highest rated borrowers. Alt-A loan-backed securities are collateralized by mortgage loans made to borrowers who lack credit documentation or necessary requirements to obtain prime borrower rates. Subprime loan-backed securities are collateralized by mortgage loans made to borrowers that have a FICO score of 680 or lower.

The following table summarizes the number of securities, fair value and the related amount of gross unrealized losses aggregated by investment category and length of time that individual debt securities have been in a continuous loss position (dollars in thousands):

	December 31, 2019			December 31, 2018		
	Less than 12 months			**Less than 12 months**		
	Gross Unrealized Losses	**Fair Value**	**# of securities**	**Gross Unrealized Losses**	**Fair Value**	**# of securities**
U.S. government securities	$ 439	$ 35,304	1	$ 163,795	$ 3,974,019	13
Other government securities	49	3,976	1	4,731	272,178	12
Public utilities	1,916	177,199	22	51,088	1,502,841	146
Corporate securities	13,236	1,303,684	93	546,814	17,308,634	1,395
Residential mortgage-backed	824	251,299	27	2,241	88,304	57
Commercial mortgage-backed	3,415	361,889	35	13,282	906,683	56
Other asset-backed securities	8,180	684,169	72	1,883	311,333	57
Total temporarily impaired securities	$ 28,059	$ 2,817,520	251	$ 783,834	$ 24,363,992	1,736
	12 months or longer			**12 months or longer**		
	Gross Unrealized Losses	**Fair Value**	**# of securities**	**Gross Unrealized Losses**	**Fair Value**	**# of securities**
U.S. government securities	$ 266	$ 104,589	2	$ 75,093	$ 1,420,441	11
Other government securities	-	-	-	9,039	103,619	9
Public utilities	433	8,710	1	29,777	520,522	48
Corporate securities	3,523	108,060	22	232,104	3,421,660	321
Residential mortgage-backed	719	62,884	43	5,911	139,273	77
Commercial mortgage-backed	46	10,529	2	20,167	511,273	47
Other asset-backed securities	1,212	63,245	13	10,852	375,711	76
Total temporarily impaired securities	$ 6,199	$ 358,017	83	$ 382,943	$ 6,492,499	589
	Total			**Total**		
	Gross Unrealized Losses	**Fair Value**	**# of securities**	**Gross Unrealized Losses**	**Fair Value**	**# of securities**
U.S. government securities	$ 705	$ 139,893	3	$ 238,888	$ 5,394,460	24
Other government securities	49	3,976	1	13,770	375,797	21
Public utilities	2,349	185,909	23	80,865	2,023,363	194
Corporate securities	16,759	1,411,744	115	778,918	20,730,294	1,716
Residential mortgage-backed	1,543	314,183	70	8,152	227,577	134
Commercial mortgage-backed	3,461	372,418	37	33,449	1,417,956	103
Other asset-backed securities	9,392	747,414	85	12,735	687,044	133
Total temporarily impaired securities	$ 34,258	$ 3,175,537	334	$ 1,166,777	$ 30,856,491	2,325

Other-Than-Temporary Impairments on Available For Sale Debt Securities

The Company periodically reviews its available for sale debt securities on a case-by-case basis to determine if any decline in fair value to below cost or amortized cost is other-than-temporary. Factors considered in determining whether a decline is other-than-temporary include the length of time a security has been in an unrealized loss position, the severity of the unrealized loss and the reasons for the decline in value and expectations for the amount and timing of a recovery in fair value.

Securities the Company determines are underperforming or potential problem securities are subject to regular review. To facilitate the review, securities with significant declines in value, or where other objective criteria evidencing credit deterioration have been met, are included on a watch list. Among the criteria for securities to be included on a watch list are: credit deterioration that has led to a significant decline in fair value of the security; a significant covenant related to the security has been breached; or an issuer has filed or indicated a possibility of filing for bankruptcy, has missed or announced it intends to miss a scheduled interest or principal payment, or has experienced a specific material adverse change that may impair its creditworthiness.

In performing these reviews, the Company considers the relevant facts and circumstances relating to each investment and exercises considerable judgment in determining whether a security is other-than-temporarily impaired. Assessment factors include judgments about an obligor's current and projected financial position, an issuer's current and projected ability to service and repay its debt obligations, the existence of, and realizable value of, any collateral backing the obligations and the macro-economic and micro-economic outlooks for specific industries and issuers. This assessment may also involve assumptions regarding underlying collateral such as prepayment rates, default and recovery rates, and third-party servicing capabilities.

Among the specific factors considered are whether the decline in fair value results from a change in the credit quality of the security itself, or from a downward movement in the market as a whole, and the likelihood of recovering the carrying value based on the near-term prospects of the issuer. Unrealized losses that are considered to be primarily the result of market conditions (e.g., minor increases in interest rates, temporary market illiquidity or volatility, or industry-related events) and where the Company also believes there exists a reasonable expectation for recovery in the near term are usually determined to be temporary. To the extent that factors contributing to impairment losses recognized affect other investments, such investments are also reviewed for other-than-temporary impairment and losses are recorded when appropriate.

In addition to the review procedures described above, investments in asset-backed securities where market prices are depressed are subject to a review of their future estimated cash flows, including expected and stress case scenarios, to identify potential shortfalls in contractual payments. These estimated cash flows are developed using available performance indicators from the underlying assets including current and projected default or delinquency rates, levels of credit enhancement, current subordination levels, vintage, expected loss severity and other relevant characteristics. These estimates reflect a combination of data derived by third parties and internally developed assumptions. Where possible, this data is benchmarked against third-party sources.

Even in the case of severely depressed market values on asset-backed securities, the Company places significant reliance on the results of its cash flow testing and its lack of an intent to sell these securities until their fair values recover when reaching other-than-temporary impairment conclusions with regard to these securities. Other-than-temporary impairment charges are recorded on asset-backed securities when the Company forecasts a contractual payment shortfall.

The Company recognizes other-than-temporary impairments on debt securities in an unrealized loss position when any of the following circumstances exists:

- The Company does not expect full recovery of the amortized cost based on the discounted cash flows estimated to be collected;
- The Company intends to sell a security; or,
- It is more likely than not that the Company will be required to sell a security prior to recovery.

For mortgage-backed securities, credit impairment is assessed using a cash flow model that estimates the cash flows on the underlying mortgages, using the security-specific collateral characteristics and transaction structure. The model estimates cash flows from the underlying mortgage loans and distributes those cash flows to various tranches of securities, considering the transaction structure and any subordination and credit enhancements existing in that structure. The cash flow model incorporates actual cash flows on the mortgage-backed securities through the current period and then projects the remaining cash flows using a number of assumptions, including prepayment speeds, default rates and loss severity.

Specifically for prime and Alt-A RMBS, the assumed default percentage is dependent on the severity of delinquency status, with foreclosures and real estate owned receiving higher rates, but also includes the currently performing loans. As of December 31, 2019 and 2018, assumed default rates for delinquent loans ranged from 15% to 100%. At December 31,

2019 and 2018, assumed loss severities were applied to generate and analyze cash flows of each security and ranged from 30% to 70% and 25% to 70%, respectively.

These estimates reflect a combination of data derived by third parties and internally developed assumptions. Where possible, this data is benchmarked against other third-party sources. In addition, these estimates are extrapolated along a default timing curve to estimate the total lifetime pool default rate.

Other-than-temporary impairments are calculated as the difference between amortized cost and fair value. For other-than-temporarily impaired securities where Jackson does not intend to sell the security and it is not more likely than not that Jackson will be required to sell the security prior to recovery, total other-than-temporary impairments are reduced by the non-credit portion of the other-than-temporary impairments, which are recognized in other comprehensive income. The resultant net other-than-temporary impairments recorded in net income reflect only the credit loss on the other-than-temporarily impaired securities. The amortized cost of the other-than-temporarily impaired securities is reduced by the amount of this credit loss.

For securities that were deemed to be other-than-temporarily impaired and for which a non-credit loss was recorded in other comprehensive income, the amount recorded as an unrealized gain (loss) represents the difference between the fair value and the new amortized cost basis of the securities. The unrealized gain (loss) on other-than-temporarily impaired securities is recorded in other comprehensive income.

The following table summarizes net realized losses on investments (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Available-for-sale debt securities			
Realized gains on sale	$ 302,047	$ 52,155	$ 152,283
Realized losses on sale	(107,036)	(59,731)	(201,604)
Impairments:			
Total other-than-temporary impairments	(1,619)	(11,358)	(3,070)
Portion of other-than-temporary impairments included in other comprehensive income	(724)	(512)	18
Net other-than-temporary impairments	(2,343)	(11,870)	(3,052)
Other	204	818	1,710
Net realized gains (losses) on non-derivative investments	192,872	(18,628)	(50,663)
Net losses on derivative instruments	(6,652,277)	(606,371)	(3,376,666)
Total net realized losses on investments	$ (6,459,405)	$ (624,999)	$ (3,427,329)

The net losses on derivative instruments included in the above table are further detailed in Note 4.

The aggregate fair value of securities sold at a loss for the years ended December 31, 2019, 2018, and 2017 was $2,305.4 million, $3,903.1 million and $4,276.1 million, respectively, which was approximately 96%, 99%, and 96% of book value, respectively.

The following summarizes the current year activity for credit losses recognized in net income on securities where an other-than-temporary impairment was identified and the non-credit portion of the other-than-temporary impairment was included in other comprehensive income (in thousands):

	Years Ended December 31, 2019	Years Ended December 31, 2018
Cumulative credit loss beginning balance	$ 200,929	$ 227,263
Additions:		
New credit losses	1,087	6,082
Incremental credit losses	1,255	782
Reductions:		
Securities sold, paid down or disposed of	(20,802)	(27,148)
Securities where there is intent to sell	(1,087)	(6,050)
Cumulative credit loss ending balance	$ 181,382	$ 200,929

There are inherent uncertainties in assessing the fair values assigned to the Company's investments and in determining whether a decline in fair value is other-than-temporary. The Company's reviews of net present value and fair value involve several criteria including economic conditions, credit loss experience, other issuer-specific developments and estimated future cash flows. These assessments are based on the best available information at the time. Factors such as market liquidity, the widening of bid/ask spreads and a change in the cash flow assumptions can contribute to future price volatility. If actual experience differs negatively from the assumptions and other considerations used in the consolidated financial statements, unrealized losses currently reported in accumulated other comprehensive income may be recognized in the consolidated income statements in future periods.

The Company currently has no intent to sell debt securities with unrealized losses considered to be temporary until they mature or recover in value and believes that it has the ability to do so. However, if the specific facts and circumstances surrounding an individual security, or the outlook for its industry sector change, the Company may sell the security prior to its maturity or recovery and realize a loss.

Equity Securities
At December 31, 2019 and 2018, investments in limited partnerships had carrying values of $1,384.1 million and $1,276.3 million, respectively.

In 2017, the Company funded PPM Loan Holding Management Company, LLC, an affiliated investment entity facilitating the issuance of collateralized loan obligations. At December 31, 2019 and 2018, the Company's investment in PPM Loan Holding Management Company, LLC had a carrying value of $83.6 million and $96.6 million, respectively, and was included in equity securities.

Limited Partnerships and Limited Liability Companies
The Company invests in certain limited partnerships ("LPs") and limited liability companies ("LLCs") that it has concluded are VIEs. Based on the analysis of these entities, the Company is not the primary beneficiary of the VIEs as it does not have the power to direct the activities of the VIE that most significantly impact the VIE's economic performance. In addition, the Company does not have the obligation to absorb losses, or the right to receive benefits that could potentially be significant to the entities.

The carrying amounts of the Company's investments in the LPs and LLCs are recognized in equity securities on the consolidated balance sheets. Unfunded commitments for these investments are detailed in Note 13. The Company's exposure to loss is limited to the capital invested and unfunded commitments related to the LPs and LLCs.

Mutual Funds
The Company invests in certain mutual funds that it has concluded are VIEs. Based on the analysis of these entities, the Company is not the primary beneficiary of the VIEs.

Mutual funds for which the Company does not have the power to direct the activities of the VIE that most significantly impact the VIE's economic performance or for which the Company does not have the obligation to absorb losses or the

right to receive benefits that could potentially be significant to the entities are recognized in equity securities on the consolidated balance sheets and were $135.8 million and $107.6 million at December 31, 2019 and 2018, respectively.

Structured Securities

The Company makes investments in structured debt securities issued by VIEs for which it is not the manager. These structured securities include RMBS, CMBS, and ABS. The Company has not provided financial or other support with respect to these VIEs other than the original investment. The Company has determined that it is not the primary beneficiary of these VIEs due to the relative size of the investment in comparison to the principal amount of the structured debt securities issued by the VIEs and the level of credit subordination that reduces the Company's obligation to absorb losses or right to receive benefits that could potentially be significant to the entities. The Company's maximum exposure to loss on these structured debt securities is limited to the amortized cost for these investments. The Company recognizes the variable interest in these VIEs at fair value on the consolidated balance sheets.

Commercial Mortgage Loans

Commercial mortgage loans of $9.9 billion and $9.4 billion at December 31, 2019 and 2018, respectively, are reported net of an allowance for loan losses of $8.9 million and $5.4 million at each date, respectively. At December 31, 2019, commercial mortgage loans were collateralized by properties located in 40 states. Jackson's commercial mortgage loan portfolio does not include single-family residential mortgage loans, and is therefore not exposed to the risk of defaults associated with residential subprime mortgage loans. Jackson periodically reviews these loans for impairment. During 2019 and 2018, Jackson recognized impairment charges against the allowance for loan losses of nil and $1.7 million, respectively.

The following table provides a summary of the allowance for losses in the Company's commercial mortgage loan portfolio at December 31, (in thousands):

Allowance for loan losses:	2019	2018
Balance at beginning of year	$ 5,441	$ 6,844
Charge-offs	-	(1,694)
Recoveries	-	-
Net charge-offs	-	(1,694)
Addition to allowance	3,437	291
Balance at end of year	$ 8,878	$ 5,441

The following table provides a summary of the allowance for losses in Jackson's commercial mortgage loan portfolio (in thousands):

	December 31, 2019		December 31, 2018	
	Allowance for Loan Losses	Recorded Investment	Allowance for Loan Losses	Recorded Investment
Collectively evaluated for impairment	8,878	9,903,569	5,441	9,405,897
Total	$ 8,878	$ 9,903,569	$ 5,441	$ 9,405,897

As of December 31, 2019 and 2018, the Company's commercial mortgage loan portfolio is current and accruing interest. Delinquency status is determined from the date of the first missed contractual payment.

Under Jackson's policy for monitoring commercial mortgage loans, all impaired commercial mortgage loans are closely evaluated subsequent to impairment. The table below summarizes the recorded investment, unpaid principal balance, related loan allowance, average recorded investment and investment income recognized on impaired loans (in thousands):

	Recorded Investment	Unpaid Principal Balance	Related Loan Allowance	Average Recorded Investment	Investment Income Recognized
December 31, 2019:					
Impaired Loans with a Valuation Allowance					
Retail	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -
Impaired Loans without a Valuation Allowance					
Retail	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -
Total Impaired Loans					
Retail	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -

	Recorded Investment	Unpaid Principal Balance	Related Loan Allowance	Average Recorded Investment	Investment Income Recognized
December 31, 2018:					
Impaired Loans with a Valuation Allowance					
Retail	$ -	$ -	$ -	$ 694	$ -
Total	$ -	$ -	$ -	$ 694	$ -
Impaired Loans without a Valuation Allowance					
Retail	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -
Total Impaired Loans					
Retail	$ -	$ -	$ -	$ 694	$ -
Total	$ -	$ -	$ -	$ 694	$ -

The following tables provide information about the credit quality of commercial mortgage loans (in thousands):

	December 31, 2019				
	In Good Standing [1]	Restructured	Greater than 90 Days Delinquent	In the Process of Foreclosure	Total Carrying Value
Apartment	$ 3,776,245	$ -	$ -	$ -	$ 3,776,245
Hotel	818,136	-	-	-	818,136
Office	1,256,136	-	-	-	1,256,136
Retail	1,776,944	-	-	-	1,776,944
Warehouse	2,276,108	-	-	-	2,276,108
Total	$ 9,903,569	$ -	$ -	$ -	$ 9,903,569

	December 31, 2018				
	In Good Standing	Restructured	Greater than 90 Days Delinquent	In the Process of Foreclosure	Total Carrying Value
Apartment	$ 3,427,767	$ -	$ -	$ -	$ 3,427,767
Hotel	840,919	-	-	-	840,919
Office	1,060,419	-	-	-	1,060,419
Retail	1,787,481	-	-	-	1,787,481
Warehouse	2,289,311	-	-	-	2,289,311
Total	$ 9,405,897	$ -	$ -	$ -	$ 9,405,897

[1] Includes mezzanine loans of $3.8 million and $66.0 million in the categories of Apartment and Office, respectively.

As of December 31, 2019 and 2018, there were no commercial mortgage loans involved in troubled debt restructuring.

Other Invested Assets

Other invested assets primarily include investments in Federal Home Loan Bank capital stock and real estate. At both December 31, 2019 and 2018, Federal Home Loan Bank capital stock had carrying value of $125.4 million. At December 31, 2019 and 2018, real estate totaling $256.8 million and $263.8 million, respectively, included foreclosed properties with a book value of $0.7 million in both 2019 and 2018.

Securities Lending

The Company has entered into securities lending agreements with agent banks whereby blocks of securities are loaned to third parties, primarily major brokerage firms. As of December 31, 2019 and 2018, the estimated fair value of loaned securities was $46.4 million and $41.9 million, respectively. The agreements require a minimum of 102 percent of the fair value of the loaned securities to be held as collateral, calculated on a daily basis. To further minimize the credit risks related to these programs, the financial condition of counterparties is monitored on a regular basis. At December 31, 2019 and 2018, cash collateral received in the amount of $48.3 million and $43.5 million, respectively, was invested by the agent banks and included in cash and cash equivalents of the Company. A securities lending payable for the overnight and continuous loans is included in liabilities in the amount of cash collateral received.

Securities lending transactions are used to generate income. Income and expenses associated with these transactions are reported as net investment income.

Repurchase Agreements

The Company routinely enters into repurchase agreements whereby the Company agrees to sell and repurchase securities. These agreements are accounted for as financing transactions, with the assets and associated liabilities included in the consolidated balance sheets. During 2019 and 2018, short-term borrowings under such agreements averaged $77.0 million and $369.0 million, respectively, with weighted average interest rates of 2.29% and 1.85% during 2019 and 2018, respectively. At both December 31, 2019 and 2018, the outstanding repurchase agreement balance was nil, collateralized with US Treasury notes and maturing within 30 days, and was included within other liabilities in the consolidated balance

sheets. In the event of a decline in the fair value of the pledged collateral under these agreements, the Company may be required to transfer cash or additional securities as pledged collateral. Interest expense totaled $1.8 million, $6.8 million, and $4.3 million in 2019, 2018, and 2017, respectively. The highest level of short-term borrowings at any month end was $410.6 million in 2019 and $1,009.9 million in 2018.

Investment Income
The sources of net investment income were as follows (in thousands):

	Years Ended December 31,		
	2019	**2018**	**2017**
Debt securities	$ 2,139,728	$ 1,933,243	$ 1,963,569
Equity securities	206,784	180,962	158,809
Commercial mortgage loans	392,318	340,636	305,338
Derivative instruments	72,667	126,239	246,221
Policy loans	410,584	393,166	400,788
Other investment (loss) income	(5,807)	52,515	(6,052)
Total investment income	3,216,274	3,026,761	3,068,673
Less: income on funds held under reinsurance treaties	(329,755)	(310,554)	(322,764)
Less: investment expenses	(125,219)	(114,900)	(91,367)
Net investment income	$ 2,761,300	$ 2,601,307	$ 2,654,542

Unrealized gains included in investment income that were recognized on equity securities held were $189.3 million, $169.9 million, and $146.2 million, respectively, at December 31, 2019, 2018, and 2017. Investment income (loss) of $4.4 million, $(0.6) million, and $0.6 million was recognized on securities carried at fair value recorded through income at December 31, 2019, 2018, and 2017, respectively.

During 2019, investment income was reduced by $329.8 million for expense incurred on the liability for funds held under reinsurance treaties, including $321.4 million on policy loans, $3.5 million of debt security income, $4.4 million gain on debt securities with fair value recorded through the consolidated income statement, and $0.5 million of income from other invested assets. During 2018, investment income was reduced by $310.6 million for expense incurred on the liability for funds held under reinsurance treaties, including $307.2 million on policy loans, $3.2 million of debt security income, $0.6 million loss on debt securities with fair value recorded through the consolidated income statement, and $0.8 million of income from other invested assets. During 2017, investment income was reduced by $322.8 million for expense incurred on the liability for funds held under reinsurance treaties, including $320.1 million on policy loans, $2.4 million of debt security income, $0.4 million loss on debt securities with fair value recorded through the consolidated income statement, and $0.7 million of income from other invested assets.

4. Derivative Instruments

Jackson's business model includes the acceptance, monitoring and mitigation of risk. Specifically, Jackson considers, among other factors, exposures to interest rate and equity market movements, foreign exchange rates and other asset or liability prices. The Company uses derivative instruments to mitigate or reduce these risks in accordance with established policies and goals. Jackson's derivative holdings, while effective in managing defined risks, are not structured to meet accounting requirements to be designated as hedging instruments. As a result, freestanding derivatives are carried at fair value with changes recorded in other net investment losses.

Cross-currency total return swaps, which embody spot and forward currency swaps and, in some cases, interest rate and equity index swaps, are entered into for the purpose of hedging the Company issued foreign currency denominated trust instruments supported by funding agreements. Cross-currency total return swaps serve to hedge foreign currency exchange risk embedded in the funding agreements and are carried at fair value. The fair value of derivatives embedded in funding agreements, including unrealized foreign currency translation gains and losses, are included in the carrying value of the trust instruments supported by funding agreements. Amounts paid or received are netted with amounts paid or received on the hedged foreign currency denominated trust agreements supported by funding agreements. Foreign currency translation gains and losses associated with funding agreement hedging activities are included in other net investment losses.

Cross-currency swaps are over-the-counter agreements to exchange interest and principal payments denominated in different currencies. These contracts are entered into for the purpose of hedging the foreign currency exposure on certain debt securities held in the investment portfolio. Cross-currency swaps are carried at fair value.

Credit default swaps, with maturities up to five years, are agreements where the Company has purchased default protection on certain underlying corporate bonds held in its portfolio. These contracts allow the Company to sell the protected bonds at par value to the counterparty if a defined "default event" occurs, in exchange for periodic payments made by the Company for the life of the agreement. Credit default swaps are carried at fair value. The Company does not currently sell default protection using credit default swaps or other similar derivative instruments.

Put-swaption contracts provide the purchaser with the right, but not the obligation, to require the writer to pay the present value of a long-term interest rate swap at future exercise dates. The Company purchases and writes put-swaptions for hedging purposes with original maturities of up to 10 years. Put-swaptions hedge against movements in interest rates. Written put-swaptions may be entered into in conjunction with associated put-swaptions purchased from the same counterparties, referred to as linked put-swaptions. Linked put-swaptions have identical notional amounts and strike prices, but have different underlying swap terms. Linked put-swaptions are presented at the fair value of the net position for each pair of contracts. Non-linked put-swaptions are carried at fair value.

Equity index futures contracts and equity index options (including various call and put options, interest rate-contingent options, currency-contingent options, and put spreads), which are used to hedge the Company's equity risk, including obligations associated with its fixed index annuities and guarantees in variable annuity products, are carried at fair value. These insurance products contain embedded options whose fair values are reported in other contract holder funds and reserves for future policy benefits and claims payable.

Total return swaps, for which the Company receives returns based on reference pools of assets in exchange for short-term floating rate payments based on notional amounts, are held for both hedging and investment purposes, and are carried at fair value.

Interest rate swap agreements used for hedging purposes generally involve the exchange of fixed and floating payments based on a notional contract amount over the period for which the agreement remains outstanding without an exchange of the underlying notional amount. Interest rate swaps are carried at fair value.

Treasury futures contracts are used to hedge movements in interest rates and are carried at fair value.

A summary of the aggregate contractual or notional amounts and fair values of the Company's freestanding derivative instruments is as follows (in thousands):

	December 31, 2019				
	Assets		Liabilities		
	Contractual/ Notional Amount [1]	Fair Value	Contractual/ Notional Amount [1]	Fair Value	Net Fair Value
Cross-currency swaps	$ 154,103	$ 4,765	$ 125,571	$ (1,402)	$ 3,363
Cross-currency total return swaps	541,688	7,587	388,979	(20,627)	(13,040)
Equity index call options	31,000,000	561,416	-	-	561,416
Equity index futures	-	-	19,065,289	-	-
Equity index put options	44,500,000	323,321	-	-	323,321
Interest rate swaps	8,750,000	501,690	1,000,000	(2,233)	499,457
Put-swaptions	3,000,000	87,588	-	-	87,588
Treasury futures	-	-	2,572,453	-	-
Total	$ 87,945,791	$ 1,486,367	$ 23,152,292	$ (24,262)	$ 1,462,105

	December 31, 2018				
	Assets		Liabilities		
	Contractual/ Notional Amount [1]	Fair Value	Contractual/ Notional Amount [1]	Fair Value	Net Fair Value
Cross-currency total return swaps	$ 432,811	$ 6,583	$ 582,150	$ (25,744)	$ (19,161)
Equity index call options	41,250,000	73,831	-	-	73,831
Equity index futures	-	-	24,590,242	-	-
Equity index put options	35,000,000	472,828	9,000,000	(278,464)	194,364
Interest rate swaps	11,000,000	163,408	3,000,000	(20,181)	143,227
Put-swaptions	3,000,000	13,987	-	-	13,987
Treasury futures	-	-	4,096,734	-	-
Total	$ 90,682,811	$ 730,637	$ 41,269,126	$ (324,389)	$ 406,248

The following tables reflect the results of the Company's derivatives, including gains (losses) and change in fair value of freestanding derivative instruments and embedded derivatives (in thousands):

	Year Ended December 31, 2019		
	Net Derivative Gains (Losses)	Net Investment Income	Net Gain (Loss)
Cross-currency swaps	$ 813	$ 1,839	$ 2,652
Equity index call options	103,656	-	103,656
Equity index futures	(6,390,835)	-	(6,390,835)
Equity index put options	(1,278,712)	-	(1,278,712)
Fixed index annuity embedded derivatives	(309,921)	-	(309,921)
Interest rate swaps	356,231	70,828	427,059
Put-swaptions	64,775	-	64,775
Treasury futures	540,248	-	540,248
Variable annuity embedded derivatives	261,468	-	261,468
Total	$ (6,652,277)	$ 72,667	$ (6,579,610)

	Year Ended December 31, 2018		
	Net Derivative Gains (Losses)	Net Investment Income	Net Gain (Loss)
Equity index call options	$ (700,111)	$ -	$ (700,111)
Equity index futures	2,080,356	-	2,080,356
Equity index put options	(510,618)	-	(510,618)
Fixed index annuity embedded derivatives	42,221	-	42,221
Interest rate swaps	(271,773)	126,239	(145,534)
Put-swaptions	13,686	-	13,686
Treasury futures	29,954	-	29,954
Variable annuity embedded derivatives	(1,290,086)	-	(1,290,086)
Total	$ (606,371)	$ 126,239	$ (480,132)

	Year Ended December 31, 2017		
	Net Derivative Gains (Losses)	Net Investment Income	Net Gain (Loss)
Equity index call options	$ 1,892,556	$ -	$ 1,892,556
Equity index futures	(5,030,793)	-	(5,030,793)
Equity index put options	(279,592)	-	(279,592)
Fixed index annuity embedded derivatives	(327,420)	-	(327,420)
Interest rate swaps	(182,068)	246,221	64,153
Put-swaptions	(7,515)	-	(7,515)
Treasury futures	34,224	-	34,224
Variable annuity embedded derivatives	523,942	-	523,942
Total	$ (3,376,666)	$ 246,221	$ (3,130,445)

All of Jackson's trade agreements for freestanding, over-the-counter derivatives contain credit downgrade provisions that allow a party to assign or terminate derivative transactions if the counterparty's credit rating declines below an established limit. At December 31, 2019 and 2018, the fair value of Jackson's net derivative assets by counterparty were $1,462.1 million and $544.6 million, respectively, and held collateral was $1,752.1 million and $669.1 million respectively, related to these agreements. At December 31, 2019 and 2018, the fair value of Jackson's net derivative liabilities by counterparty was nil and $138.4 million, respectively, and provided collateral was nil and $133.2 million, respectively, related to these agreements. If all of the downgrade provisions had been triggered at December 31, 2019 or 2018, in aggregate, Jackson would have had to disburse $290.0 million and $129.6 million, respectively, to counterparties, representing the net fair values of derivatives by counterparty, less collateral held.

Offsetting Assets and Liabilities

The Company's derivative instruments, repurchase agreements and securities lending agreements are subject to master netting arrangements and collateral arrangements. A master netting arrangement with a counterparty creates a right of offset for amounts due to and due from that same counterparty that is enforceable in the event of a default or bankruptcy. The Company recognizes amounts subject to master netting arrangements on a gross basis within the consolidated balance sheets.

The following tables present the gross and net information about the Company's financial instruments subject to master netting arrangements (in thousands):

	December 31, 2019						
				Gross Amounts Not Offset in the Consolidated Balance Sheets			
	Gross Amounts Recognized	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts Presented in the Consolidated Balance Sheets	Financial Instruments[1]	Cash Collateral	Securities Collateral [2]	Net Amount
Financial Assets:							
Derivative assets	$ 1,486,367	$ -	$ 1,486,367	$ 24,262	$ 820,674	$ 617,770	$ 23,661
Financial Liabilities:							
Derivative liabilities	$ 24,262	$ -	$ 24,262	$ 24,262	$ -	$ -	$ -
Securities loaned	48,318	-	48,318	-	48,318	-	-
Total financial liabilities	$ 72,580	$ -	$ 72,580	$ 24,262	$ 48,318	$ -	$ -

	December 31, 2018						
				Gross Amounts Not Offset in the Consolidated Balance Sheets			
	Gross Amounts Recognized	Gross Amounts Offset in the Consolidated Balance Sheets	Net Amounts Presented in the Consolidated Balance Sheets	Financial Instruments[1]	Cash Collateral	Securities Collateral [2]	Net Amount
Financial Assets:							
Derivative assets	$ 730,637	$ -	$ 730,637	$ 186,011	$ 328,687	$ 210,733	$ 5,206
Financial Liabilities:							
Derivative liabilities	$ 324,389	$ -	$ 324,389	$ 186,011	$ -	$ 126,987	$ 11,391
Securities loaned	43,470	-	43,470	-	43,470	-	-
Total financial liabilities	$ 367,859	$ -	$ 367,859	$ 186,011	$ 43,470	$ 126,987	$ 11,391

[1] Represents the amount that could be offset under master netting or similar arrangements that management elects not to offset on the consolidated balance sheets.

[2] Excludes initial margin amounts for exchange-traded derivatives.

In the above tables, the amounts of assets or liabilities presented in the Company's consolidated balance sheets are offset first by financial instruments that have the right of offset under master netting or similar arrangements with any remaining amount reduced by the amount of cash and securities collateral. The actual amount of collateral may be greater than amounts presented in the tables. The above tables exclude net embedded derivative liabilities of $4,172.0 million and

$3,948.0 million for 2019 and 2018, respectively, as these derivatives are not subject to master netting arrangements. In addition, repurchase agreements are presented within other liabilities in the consolidated balance sheets.

5. Fair Value Measurements

The following table summarizes the fair value and carrying value of Jackson's financial instruments (in thousands). The basis for determining the fair value of each instrument is described in Note 2.

	December 31, 2019		December 31, 2018	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets				
Debt securities [(1)]	$ 56,974,022	$ 56,974,022	$ 51,865,357	$ 51,865,357
Equity securities	1,531,780	1,531,780	1,748,395	1,748,395
Commercial mortgage loans	9,903,569	10,232,092	9,405,897	9,282,225
Policy loans [(1)]	4,705,744	4,705,744	4,687,437	4,687,437
Derivative instruments	1,486,367	1,486,367	730,637	730,637
FHLBI capital stock	125,415	125,415	125,415	125,415
Cash and cash equivalents	1,843,787	1,843,787	3,741,713	3,741,713
GMIB reinsurance recoverable	302,796	302,796	300,600	300,600
Receivables from affiliates	247,770	247,770	283,793	283,793
Separate account assets	195,070,474	195,070,474	163,301,375	163,301,375
Liabilities				
Other contract holder funds				
Annuity reserves [(2)]	$ 40,818,140	$ 47,985,566	$ 38,678,108	$ 42,728,096
Reserves for guaranteed investment contracts	1,529,591	1,569,453	1,665,967	1,649,954
Trust instruments supported by funding agreements	8,852,566	9,086,798	7,298,432	7,322,631
Federal Home Loan Bank funding agreements	1,904,935	1,925,047	1,935,710	1,911,207
Funds held under reinsurance treaties	3,760,294	3,760,294	3,745,074	3,745,074
Debt	574,724	660,112	615,733	683,675
Securities lending payable	48,318	48,318	43,470	43,470
Derivative instruments	24,262	24,262	324,389	324,389
Federal Home Loan Bank advances	300,140	300,140	-	-
Separate account liabilities	195,070,474	195,070,474	163,301,375	163,301,375

(1) Includes items carried at fair value under the fair value option, for which there is a corresponding liability within funds held under reinsurance treaties.

(2) Annuity reserves represent only the components of other contract holder funds and reserves for future policy benefits and claims payable that are considered to be financial instruments.

The following is a discussion of the methodologies used to determine fair values of the financial instruments measured on both a recurring and nonrecurring basis reported in the following tables.

Debt and Equity Securities

The fair values for debt and equity securities (excluding limited partnerships, further described below) are determined using information available from independent pricing services, broker-dealer quotes, or internally derived estimates. Priority is given to publicly available prices from independent sources, when available. Securities for which the independent pricing service does not provide a quotation are either submitted to independent broker-dealers for prices or priced internally. Typical inputs used by these three pricing methods include, but are not limited to, reported trades, benchmark yields, credit spreads, liquidity premiums and/or estimated cash flows based on default and prepayment assumptions.

As a result of typical trading volumes and the lack of specific quoted market prices for most debt securities, independent pricing services will normally derive the security prices through recently reported trades for identical or similar securities,

making adjustments through the reporting date based upon available market observable information as outlined above. If there are no recently reported trades, the independent pricing services and broker-dealers may use matrix or pricing model processes to develop a security price where future cash flow expectations are developed based upon collateral performance and discounted at relevant market rates. Certain securities are priced using broker-dealer quotes, which may utilize proprietary inputs and models. Additionally, the majority of these quotes are non-binding.

Included in the pricing of asset-backed securities are estimates of the rate of future prepayments of principal over the remaining life of the securities. Such estimates are derived based on the characteristics of the underlying structure and prepayment assumptions believed to be relevant for the underlying collateral. Actual prepayment experience may vary from these estimates.

Internally derived estimates may be used to develop a fair value for securities for which the Company is unable to obtain either a reliable price from an independent pricing service or a suitable broker-dealer quote. These fair value estimates may incorporate Level 2 and Level 3 inputs and are generally derived using expected future cash flows, discounted at market interest rates available from market sources based on the credit quality and duration of the instrument. For securities that may not be reliably priced using these internally developed pricing models, a fair value may be estimated using indicative market prices. These prices are indicative of an exit price, but the assumptions used to establish the fair value may not be observable or corroborated by market observable information and, therefore, represent Level 3 inputs.

The Company performs a monthly analysis on the prices and credit spreads received from third parties to ensure that the prices represent a reasonable estimate of the fair value. This process involves quantitative and qualitative analysis and is overseen by investment and accounting professionals. Examples of procedures performed include, but are not limited to, initial and ongoing review of third party pricing service methodologies, review of pricing statistics and trends, back testing recent trades and monitoring of trading volumes. In addition, the Company considers whether prices received from independent broker-dealers represent a reasonable estimate of fair value through the use of internal and external cash flow models, which are developed based on spreads and, when available, market indices. As a result of this analysis, if the Company determines there is a more appropriate fair value based upon the available market data, the price received from the third party may be adjusted accordingly.

For those securities that were internally valued at December 31, 2019 and 2018, the pricing model used by the Company utilizes current spread levels of similarly rated securities to determine the market discount rate for the security. Furthermore, appropriate risk premiums for illiquidity and non-performance are incorporated in the discount rate. Cash flows, as estimated by the Company using issuer-specific default statistics and prepayment assumptions, are discounted to determine an estimated fair value.

On an ongoing basis, the Company reviews the independent pricing services' valuation methodologies and related inputs, and evaluates the various types of securities in its investment portfolio to determine an appropriate fair value hierarchy distribution based upon trading activity and the observability of market inputs. Based on the results of this evaluation, each price is classified into Level 1, 2, or 3. Most prices provided by independent pricing services, including broker-dealer quotes, are classified into Level 2 due to their use of market observable inputs.

Limited Partnerships

Fair value for limited partnership interests, which are included in equity securities, is generally determined using the proportion of Jackson's investment in each fund ("NAV equivalent") as a practical expedient for fair value. No adjustments to these amounts were deemed necessary at December 31, 2019 or 2018. As a result of using the net asset value per share practical expedient, limited partnership interests are not classified in the fair value hierarchy.

The Company's limited partnership interests are not redeemable and distributions received are generally the result of liquidation of the underlying assets of the partnerships. The term of Jackson's interest in the partnerships is generally ten years, but may be extended for a period of time under provisions within the partnership agreements, if applicable. The Company generally has the ability under the partnership agreements to sell its interest to another limited partner with the prior written consent of the general partner. In cases when the Company expects to sell the limited partnership interest, the estimated sales price is used to determine the fair value. These limited partnership interests are classified as Level 2 in the fair value hierarchy.

In cases when a limited partnership's financial statements are unavailable and an NAV equivalent is not available or practical, an internally developed model is used to determine fair value for that fund. These investments are classified as Level 3 in the fair value hierarchy.

Commercial Mortgage Loans
Fair values are generally determined by discounting expected future cash flows at current market interest rates, inclusive of a credit spread, for similar quality loans. For loans whose value is dependent upon the underlying property, fair value is determined to be the estimated value of the collateral. Certain characteristics considered significant in determining the spread or collateral value may be based on internally developed estimates. As a result, these investments have been classified as Level 3 within the fair value hierarchy.

Policy Loans
Policy loans are funds provided to policyholders in return for a claim on the policies values and function like demand deposits which are redeemable upon repayment, death or surrender, and there is only one market price at which the transaction could be settled – the then current carrying value. The funds provided are limited to the cash surrender value of the underlying policy. The nature of policy loans is to have a negligible default risk as the loans are fully collateralized by the value of the policy. Policy loans do not have a stated maturity and the balances and accrued interest are repaid either by the policyholder or with proceeds from the policy. Due to the collateralized nature of policy loans and unpredictable timing of payments, the Company believes the carrying value of policy loans approximates fair value.

FHLBI Capital Stock
FHLBI capital stock, which is included in other invested assets, can only be sold to FHLBI at a constant price of $100 per share. Due to the lack of valuation uncertainty, the investment has been classified as Level 1.

Freestanding Derivative Instruments
Freestanding derivative instruments are reported at fair value, which reflects the estimated amounts, net of payment accruals, which the Company would receive or pay upon sale or termination of the contracts at the reporting date. Changes in fair value are included in other net investment losses. Freestanding derivatives priced using third party pricing services incorporate inputs that are predominantly observable in the market. Inputs used to value derivatives include, but are not limited to, interest rate swap curves, credit spreads, interest rates, counterparty credit risk, equity volatility and equity index levels.

Freestanding derivative instruments classified as Level 1 include futures, which are traded on active exchanges. Freestanding derivative instruments classified as Level 2 include interest rate swaps, cross currency swaps, credit default swaps, put-swaptions and certain equity index call and put options. These derivative valuations are determined by third-party pricing services using pricing models with inputs that are observable in the market or can be derived principally from, or corroborated by, observable market data. Freestanding derivative instruments classified as Level 3 include interest rate contingent options that are valued by third-party pricing services utilizing significant unobservable inputs.

Cash and Cash Equivalents
Cash and cash equivalents primarily include money market instruments and bank deposits. Certain money market instruments are valued using unadjusted quoted prices in active markets and are classified as Level 1.

Receivables from Affiliates
The Company's receivables from affiliates are set equal to the carrying value and are classified as Level 3.

Separate Account Assets and Liabilities
Separate account assets are comprised of investments in mutual funds that transact regularly, but do not trade in active markets as they are not publicly available, and are categorized as Level 2 assets. The values of separate account liabilities are set equal to the values of separate account assets.

Other Contract Holder Funds
Fair values for immediate annuities without mortality features are derived by discounting the future estimated cash flows using current market interest rates for similar maturities. Fair values for deferred annuities, including fixed index annuities, are determined using projected future cash flows discounted at current market interest rates.

The fair value of the fixed index annuities embedded option, incorporating such factors as the volatility of returns, the level of interest rates and the time remaining until the option expires, is calculated using the closed form Black-Scholes Option Pricing model or Monte Carlo simulations, as appropriate for the type of option. Additionally, assumed withdrawal rates are used to estimate the expected volume of embedded options that will be realized by policyholders.

Fair values for guaranteed investment contracts are based on the present value of future cash flows discounted at current market interest rates.

Fair values for trust instruments supported by funding agreements are based on the present value of future cash flows discounted at current market interest rates, plus the fair value of any embedded derivatives that are not required to be reported separately.

Fair values of the FHLBI funding agreements are based on the present value of future cash flows discounted at current market interest rates.

Funds Held Under Reinsurance Treaties
The fair value of the funds held is equal to the fair value of the assets held as collateral, which primarily consist of policy loans and debt securities.

Debt
Fair values for the Company's surplus notes and other long-term debt are generally determined by prices obtained from independent broker dealers or discounted cash flow models. Such prices are derived from market observable inputs and are classified as Level 2. The Squire Surplus Note is set equal to the carrying value and is classified as Level 3.

Securities Lending Payable
The Company's securities lending payable is set equal to the cash collateral received. Due to the short-term nature of the loans, carrying value is a reasonable estimate of fair value and is classified as Level 2.

Repurchase Agreements
Carrying value of the Company's repurchase agreements, which are included in other liabilities, is considered a reasonable estimate of fair value due to their short-term maturities and are classified as Level 2.

Federal Home Loan Bank Advances
Carrying value of the Company's Federal Home Loan Bank advances, which are included in other liabilities, is considered a reasonable estimate of fair value due to their short-term maturities and are classified as Level 2.

Certain Guaranteed Benefits
Variable annuity contracts issued by the Company offer various guaranteed minimum death, withdrawal, income and accumulation benefits. Certain benefits, primarily non-life contingent components of guaranteed minimum withdrawal benefits ("GMWB"), guaranteed minimum accumulation benefits ("GMAB") and the reinsurance recoverable on the Company's guaranteed minimum income benefits ("GMIB"), are recorded at fair value. Guaranteed benefits that are not subject to fair value accounting are accounted for as insurance benefits.

Non-life contingent components of GMWBs and GMABs are recorded at fair value with changes in fair value recorded in other net investment losses. The fair value of the reserve is based on the expectations of future benefit payments and certain future fees associated with the benefits. At the inception of the contract, the Company attributes to the embedded derivative a portion of rider fees collected from the contract holder, which is then held static in future valuations. Those fees, generally referred to as the attributed fees, are set such that the present value of the attributed fees is equal to the present value of future claims expected to be paid under the guaranteed benefit at the inception of the contract. In subsequent valuations, both the present value of future benefits and the present value of attributed fees are revalued based on current market conditions and policyholder behavior assumptions. The difference between each of the two components represents the fair value of the embedded derivative. Jackson discontinued offering the GMAB in 2011.

Jackson's GMIB book is reinsured through an unrelated party and, due to the net settlement provisions of the reinsurance agreement, this contract meets the definition of a derivative. Accordingly, the GMIB reinsurance agreement is recorded at

fair value, with changes in fair value recorded in other net investment losses. Due to the inability to economically reinsure or hedge new issues of the GMIB, the Company discontinued offering the benefit in 2009.

Fair values for GMWB and GMAB embedded derivatives, as well as GMIB reinsurance recoverables, are calculated using internally developed models because active, observable markets do not exist for those guaranteed benefits.

The fair value calculation is based on the present value of future cash flows comprised of future expected benefit payments, less future attributed rider fees, over the lives of the contracts. Estimating these cash flows requires numerous estimates and subjective judgments related to capital market inputs, as well as actuarially determined assumptions related to expectations concerning policyholder behavior. Capital market inputs include expected market rates of return, market volatility, correlations of market index returns to funds, fund performance and discount rates. The more significant actuarial assumptions include benefit utilization by policyholders, persistency, mortality, and withdrawal rates. Best estimate assumptions plus risk margins are used as applicable.

At each valuation date, the Company assumes expected returns based on the greater of LIBOR swap rates and constant maturity treasury rates as of that date to determine the value of expected future cash flows produced in a stochastic process. Volatility assumptions are based on a weighting of available market data for implied market volatility for durations up to 10 years, grading to a historical volatility level by year 15, where such long-term historical volatility levels contain an explicit risk margin. Additionally, non-performance risk is incorporated into the calculation through the use of discount rates based on a AA corporate credit curve as an approximation of Jackson’s own credit risk. Risk margins are also incorporated into the model assumptions, particularly for policyholder behavior. Estimates of future policyholder behavior are subjective and are based primarily on the Company’s experience.

As markets change, mature and evolve and actual policyholder behavior emerges, management continually evaluates the appropriateness of its assumptions for this component of the fair value model.

The use of the models and assumptions described above requires a significant amount of judgment. Management believes the aggregation of each of these components results in an amount that the Company would be required to transfer for a liability, or receive for an asset, to or from a willing buyer or seller, if one existed, for those market participants to assume the risks associated with the guaranteed benefits and the related reinsurance. However, the ultimate settlement amount of the asset or liability, which is currently unknown, could likely be significantly different than this fair value.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following tables summarize the Company's assets and liabilities that are carried at fair value by hierarchy levels (in thousands):

	December 31, 2019			
	Total	Level 1	Level 2	Level 3
Assets				
Debt securities				
U.S. government securities	$ 6,135,749	$ 6,135,749	$ -	$ -
Other government securities	1,741,283	-	1,741,283	-
Public utilities	6,750,265	-	6,750,265	-
Corporate securities	36,350,381	-	36,350,381	-
Residential mortgage-backed	1,048,245	-	1,048,245	-
Commercial mortgage-backed	3,046,398	-	3,046,398	-
Other asset-backed securities	1,901,701	-	1,901,701	-
Equity securities	148,935	101,190	34,831	12,914
Policy loans	3,585,838	-	-	3,585,838
Derivative instruments	1,486,367		1,486,367	-
Cash and cash equivalents	1,843,787	1,843,787	-	-
GMIB reinsurance recoverable	302,796	-	-	302,796
Separate account assets	195,070,474	-	195,070,474	-
Total	$ 259,412,219	$ 8,080,726	$ 247,429,945	$ 3,901,548
Liabilities				
Embedded derivative liabilities [1]	$ 4,171,954	$ -	$ 1,381,534	$ 2,790,420
Funds held under reinsurance treaties	3,760,294	-	-	3,760,294
Derivative instruments	24,262	-	24,262	-
Total	$ 7,956,510	$ -	$ 1,405,796	$ 6,550,714

[1] Includes the embedded derivative liabilities related to GMWB reserves and fixed index annuities.

	December 31, 2018			
	Total	**Level 1**	**Level 2**	**Level 3**
Assets				
Debt securities				
U.S. government securities	$ 5,474,783	$ 5,474,783	$ -	$ -
Other government securities	1,481,176	-	1,481,176	-
Public utilities	5,918,212	-	5,918,212	-
Corporate securities	34,406,072	-	34,406,072	-
Residential mortgage-backed	813,802	-	813,801	1
Commercial mortgage-backed	2,450,968	-	2,450,968	-
Other asset-backed securities	1,320,344	-	1,320,344	-
Equity securities	501,049	409,698	80,716	10,635
Policy loans	3,543,680	-	-	3,543,680
Derivative instruments	730,637	-	722,132	8,505
Cash and cash equivalents	3,741,713	3,741,713	-	-
GMIB reinsurance recoverable	300,600	-	-	300,600
Separate account assets	163,301,375	-	163,301,375	-
Total	$ 223,984,411	$ 9,626,194	$ 210,494,796	$ 3,863,421
Liabilities				
Embedded derivative liabilities [1]	$ 3,947,956	$ -	$ 898,263	$ 3,049,693
Funds held under reinsurance treaties	3,745,074	-	-	3,745,074
Derivative instruments	324,389	-	324,389	-
Total	$ 8,017,419	$ -	$ 1,222,652	$ 6,794,767

[1] Includes the embedded derivative liabilities related to GMWB reserves and fixed index annuities.

Assets and Liabilities Measured at Fair Value Using Significant Unobservable Inputs (Level 3)

Level 3 Assets and Liabilities by Price Source
The table below presents the balances of Level 3 assets and liabilities measured at fair value with their corresponding pricing sources (in thousands).

	December 31, 2019		
Assets	**Total**	**Internal**	**External**
Equity securities	$ 12,914	$ 2,390	$ 10,524
Policy loans	3,585,838	3,585,838	-
GMIB reinsurance recoverable	302,796	302,796	-
Total	$ 3,901,548	$ 3,891,024	$ 10,524
Liabilities			
Embedded derivative liabilities [(1)]	$ 2,790,420	$ 2,790,420	$ -
Funds held under reinsurance treaties	3,760,294	3,760,294	-
Total	$ 6,550,714	$ 6,550,714	$ -

	December 31, 2018		
Assets	**Total**	**Internal**	**External**
Debt securities			
Residential mortgage-backed	$ 1	$ 1	$ -
Equity securities	10,635	111	10,524
Policy loans	3,543,680	3,543,680	-
Derivative instruments	8,505	-	8,505
GMIB reinsurance recoverable	300,600	300,600	-
Total	$ 3,863,421	$ 3,844,392	$ 19,029
Liabilities			
Embedded derivative liabilities [(1)]	$ 3,049,693	$ 3,049,693	$ -
Funds held under reinsurance treaties	3,745,074	3,745,074	-
Total	$ 6,794,767	$ 6,794,767	$ -

[(1)] Includes the embedded derivatives related to GMWB reserves.

External pricing sources for securities represent unadjusted prices from independent pricing services and independent indicative broker quotes where pricing inputs are not readily available.

Quantitative Information Regarding Internally-Priced Level 3 Assets and Liabilities

The table below presents quantitative information on significant internally-priced Level 3 assets and liabilities (in thousands):

	December 31, 2019				
	Fair Value	Valuation Technique(s)	Unobservable Input(s)	Range in bps (Weighted Average)	Impact of Increase in Input on Fair Value
Assets					
Policy loans	$ 3,585,838	Outstanding balance	N/A	N/A	N/A
GMIB reinsurance recoverable	302,796	Discounted cash flow	See below	See below	See below
Total	$ 3,888,634				
Liabilities					
Embedded derivative liabilities	$ 2,790,420	Discounted cash flow	See below	See below	See below
Funds held under reinsurance treaties	3,760,294	Carrying value of asset	N/A	N/A	N/A
Total	$ 6,550,714				

	December 31, 2018				
	Fair Value	Valuation Technique(s)	Unobservable Input(s)	Range in bps (Weighted Average)	Impact of Increase in Input on Fair Value
Assets					
Policy loans	$ 3,543,680	Outstanding balance	N/A	N/A	N/A
GMIB reinsurance recoverable	300,600	Discounted cash flow	See below	See below	See below
Total	$ 3,844,280				
Liabilities					
Embedded derivative liabilities	$ 3,049,693	Discounted cash flow	See below	See below	See below
Funds held under reinsurance treaties	3,745,074	Carrying value of asset	N/A	N/A	N/A
Total	$ 6,794,767				

Sensitivity to Changes in Unobservable Inputs

The following is a general description of sensitivities of significant unobservable inputs and their impact on the fair value measurement for the assets and liabilities reflected in the table above.

As of December 31, 2019 and 2018, securities of $2.4 million and $112 thousand, respectively, are fair valued using techniques incorporating unobservable inputs and are classified in Level 3 of the fair value hierarchy. For these assets, their unobservable inputs and ranges of possible inputs do not materially affect their fair valuations and have been excluded from the quantitative information in the table above.

The GMIB reinsurance recoverable fair value calculation is based on the present value of future cash flows comprised of future expected reinsurance benefit receipts, less future attributed premium payments to reinsurers, over the lives of the contracts. Estimating these cash flows requires actuarially determined assumptions related to expectations concerning policyholder behavior and long-term market volatility. The more significant policyholder behavior actuarial assumptions include benefit utilization, fund allocation, persistency, and mortality. In general, an increase (decrease) in assumed benefit utilization would increase (decrease) the fair value of the reinsurance recoverable; an increase (decrease) in allocation to equity funds would increase (decrease) the fair value of the reinsurance recoverable; an increase (decrease) in assumed persistency would increase (decrease) the fair value of the reinsurance recoverable; an increase (decrease) in assumed mortality would decrease (increase) the fair value of the reinsurance recoverable; and an increase (decrease) in long-term market volatility would increase (decrease) the fair value of the reinsurance recoverable.

Embedded derivative liabilities classified in Level 3 represent the fair value of GMWB and GMAB liabilities. These fair value calculations are based on the present value of future cash flows comprised of future expected benefit payments, less future attributed rider fees, over the lives of the contracts. Estimating these cash flows requires actuarially determined assumptions related to expectations concerning policyholder behavior and long-term market volatility. The more significant policyholder behavior actuarial assumptions include benefit utilization, fund allocation, persistency, and mortality. In general, an increase (decrease) in assumed benefit utilization would increase (decrease) the fair value of the

liabilities; an increase (decrease) in allocation to equity funds would increase (decrease) the fair value of the liabilities; an increase (decrease) in assumed persistency would increase (decrease) the fair value of the liabilities; an increase (decrease) in assumed mortality would decrease (increase) the fair value of the liabilities; and an increase (decrease) in long-term market volatility would increase (decrease) the fair value of the liabilities.

The tables below provide rollforwards for 2019 and 2018 of the financial instruments for which significant unobservable inputs (Level 3) are used in the fair value measurement. Gains and losses in the table below include changes in fair value due partly to observable and unobservable factors. The Company utilizes derivative instruments to manage the risk associated with certain assets and liabilities. However, the derivative instruments hedging the related risks may not be classified within the same fair value hierarchy level as the associated assets and liabilities. Therefore, the impact of the derivative instruments reported in Level 3 may vary significantly from the total income effect of the hedged instruments. Additionally, the Company's policy for determining and disclosing transfers between levels is to recognize transfers using beginning of period balances.

		Total Realized/Unrealized Gains (Losses) Included in				
(in thousands)	Fair Value as of January 1, 2019	Net Income	Other Comprehensive Income	Purchases, Sales, Issuances and Settlements	Transfers in and/or (out of) Level 3	Fair Value as of December 31, 2019
Assets						
Debt securities						
Residential mortgage-backed	$ 1	$ -	$ -	$ (1)	$ -	$ -
Equity securities	10,635	858	-	(414)	1,835	12,914
Policy loans	3,543,680	513	-	41,645	-	3,585,838
Derivative instruments	8,505	(8,505)	-	-	-	-
GMIB reinsurance recoverable	300,600	2,196	-	-	-	302,796
Liabilities						
Embedded derivative liabilities (1)	$ (3,049,693)	$ 259,273	$ -	$ -	$ -	$ (2,790,420)
Funds held under reinsurance treaties	(3,745,074)	(3,458)	(3,844)	(7,918)	-	(3,760,294)

		Total Realized/Unrealized Gains (Losses) Included in				
(in thousands)	Fair Value as of January 1, 2018	Net Income	Other Comprehensive Income	Purchases, Sales, Issuances and Settlements	Transfers in and/or (out of) Level 3	Fair Value as of December 31, 2018
Assets						
Debt securities						
Residential mortgage-backed	$ 2	$ -	$ -	$ (1)	$ -	$ 1
Equity securities	111	-	-	10,524	-	10,635
Policy loans	3,397,764	3,970	-	141,946	-	3,543,680
Derivative instruments	5,931	(3,011)	-	5,585	-	8,505
GMIB reinsurance recoverable	252,138	48,462	-	-	-	300,600
Liabilities						
Embedded derivative liabilities (1)	$ (1,711,142)	$ (1,338,551)	$ -	$ -	$ -	$ (3,049,693)
Funds held under reinsurance treaties	(3,604,525)	(1,001)	475	(140,023)	-	(3,745,074)

(1) Includes the embedded derivative related to GMWB reserves.

The components of the amounts included in purchases, sales, issuances, and settlements for years ended December 31, 2019 and 2018 shown above are as follows (in thousands):

	December 31, 2019				
	Purchases	Sales	Issuances	Settlements	Total
Assets					
Debt securities					
Residential mortgage-backed	$ -	$ (1)	$ -	$ -	$ (1)
Equity Securities	-	(414)	-	-	(414)
Policy loans	-	-	274,694	(233,049)	41,645
Derivative instruments	-	-	-	-	-
Total	$ -	$ (415)	$ 274,694	$ (233,049)	$ 41,230
Liabilities					
Funds held under reinsurance treaties	$ -	$ -	$ (313,776)	$ 305,858	$ (7,918)

	December 31, 2018				
	Purchases	Sales	Issuances	Settlements	Total
Assets					
Debt securities					
Residential mortgage-backed	$ -	$ (1)	$ -	$ -	$ (1)
Equity Securities	10,524	-	-	-	10,524
Policy loans	-	-	372,211	(230,265)	141,946
Derivative instruments	5,585	-	-	-	5,585
Total	$ 16,109	$ (1)	$ 372,211	$ (230,265)	$ 158,054
Liabilities					
Funds held under reinsurance treaties	$ -	$ -	$ (496,705)	$ 356,682	$ (140,023)

In 2019, $1.8 million was transferred from NAV to Level 3 as a result of using significant unobservable inputs since an NAV was not available. There were no transfers from Level 3 to Level 2 of the fair value hierarchy during 2019 and 2018. There were no transfers from Level 2 to Level 3 during 2019 and 2018. There were no transfers between Level 1 and 2 of the fair value hierarchy in 2019 or 2018.

The portion of gains (losses) included in net income or other comprehensive income attributable to the change in unrealized gains and losses on Level 3 financial instruments still held at December 31, 2019 and 2018 was as follows (in thousands):

	2019	2018
Assets		
Equity securities	$ 444	$ -
Derivative instruments	-	(2,505)
GMIB reinsurance recoverable	2,196	48,463
Liabilities		
Embedded derivative liabilities	$ 259,273	$ (1,338,551)
Funds held under reinsurance treaties	(3,844)	475

Fair Value of Financial Instruments Carried at Other Than Fair Value

The table below presents the carrying amount and fair value by fair value hierarchy level of certain financial instruments that are not reported at fair value (in thousands).

	Fair Value Hierarchy Level	December 31, 2019		December 31, 2018	
		Carrying Value	Fair Value	Carrying Value	Fair Value
Assets					
Commercial mortgage loans	Level 3	$ 9,903,569	$ 10,232,092	$ 9,405,897	$ 9,282,225
Policy loans	Level 3	1,119,906	1,119,906	1,143,757	1,143,757
FHLBI capital stock	Level 1	125,415	125,415	125,415	125,415
Receivables from affiliates	Level 3	247,770	247,770	283,793	283,793
Liabilities					
Other contract holder funds					
Annuity reserves [1]	Level 3	$ 36,646,186	$ 43,813,612	$ 34,730,152	$ 38,780,140
Reserves for guaranteed investment contracts	Level 3	1,529,591	1,569,453	1,665,967	1,649,954
Trust instruments supported by funding agreements	Level 3	8,852,566	9,086,798	7,298,432	7,322,631
Federal Home Loan Bank funding agreements	Level 3	1,904,935	1,925,047	1,935,710	1,911,207
Debt - Squire Surplus Note	Level 3	247,770	247,770	283,793	283,793
Debt - all other	Level 2	326,954	412,342	331,940	399,882
Securities lending payable	Level 2	48,318	48,318	43,470	43,470
Federal Home Loan Bank advances	Level 2	300,140	300,140	-	-
Separate account liabilities [2]	Level 2	195,070,474	195,070,474	163,301,375	163,301,375

[1] Annuity reserves represent only the components of other contract holder funds that are considered to be financial instruments.
[2] The values of separate account liabilities are set equal to the values of separate account assets.

Fair Value Option

The Company elected the fair value option for certain assets, which are held as collateral for reinsurance. Accordingly, the Company established a funds held liability, for which the Company also elected the fair value option. The value of the funds held liability is equal to the fair value of the assets held as collateral. The income and any changes in unrealized gains and losses on these assets and the corresponding funds held liability are included in net investment income and have no impact on the Company's consolidated income statements. Income and changes in unrealized gains and losses on other assets for which the Company has elected the fair value option are immaterial to the Company's consolidated financial statements.

6. Deferred Acquisition Costs and Deferred Sales Inducements

The balances of and changes in deferred acquisition costs, as of and for the years ended December 31, were as follows (in thousands):

	2019	2018	2017
Balance, beginning of year	$ 10,412,327	$ 10,509,849	$ 9,678,063
Deferrals of acquisition costs	796,908	747,095	839,143
Amortization related to:			
Operations	(235,278)	(971,836)	(506,326)
Derivatives	1,247,418	(148,053)	579,923
Net realized losses (gains)	(8,897)	498	3,965
Total amortization	1,003,243	(1,119,391)	77,562
Unrealized investment losses (gains)	(547,248)	274,774	(84,919)
Balance, end of year	$ 11,665,230	$ 10,412,327	$ 10,509,849

The balances of and changes in deferred sales inducements, which are reported in other assets, as of and for the years ended December 31, were as follows (in thousands):

	2019	2018	2017
Balance, beginning of year	$ 670,494	$ 644,006	$ 696,636
Deferrals of sales inducements	10,224	12,109	14,877
Amortization related to:			
Operations	(20,970)	(31,802)	(64,178)
Derivatives	203	(129)	13,483
Net realized losses (gains)	(1,053)	76	625
Total amortization	(21,820)	(31,855)	(50,070)
Unrealized investment losses (gains)	(79,831)	46,234	(17,437)
Balance, end of year	$ 579,067	$ 670,494	$ 644,006

7. Reinsurance

The Company assumes and cedes reinsurance from and to other insurance companies in order to limit losses from large exposures. However, if the reinsurer is unable to meet its obligations, the originating issuer of the coverage retains the liability. The Company reinsures certain of its risks to other reinsurers under a coinsurance, modified coinsurance, yearly renewable term, or, with Brooke Life, a monthly renewable term basis. The Company regularly monitors the financial strength rating of its reinsurers.

The Company has also acquired certain lines of business that are wholly ceded to non-affiliates. These include both direct and assumed accident and health business, direct and assumed life insurance business, and certain institutional annuities.

Effective October 1, 2018, the Company entered into a reinsurance agreement with John Hancock to assume its U.S. Group Payout Annuity business. The transaction is structured as indemnity reinsurance by Jackson of John Hancock's approximately 186,000 Group Payout Annuity certificates representing $5.0 billion of assumed premiums, ceding commission income of $555.0 million and $5.5 billion of reserves.

Effective March 15, 2019, the Company closed on a 90% reinsurance agreement with John Hancock Life Insurance Company of New York ("JHNY") to assume its Group Payout Annuity business. The transaction is structured as indemnity reinsurance by Jackson of JHNY's approximately 18,000 Group Payout Annuity certificates representing $0.5 billion of reserves.

On May 29, 2019, the Michigan Department of Insurance and Financial Services revoked the status of Scottish RE (U.S.), Inc. as an accredited reinsurer in Michigan. The Company wrote off $6.1 million of paid claims recoverable in 2019 as it was deemed probable that the Company would not recover the balance. At December 31, 2019, an allowance of $42.5 million was established for the ceded reserve.

Jackson's GMIBs are reinsured with an unrelated party and, due to the net settlement provisions of the reinsurance agreement, meet the definition of a derivative. Accordingly, the GMIB reinsurance agreement is recorded at fair value on the Company's consolidated balance sheets, with changes in fair value recorded in other net investment losses. GMIB reinsured benefits are subject to aggregate annual claim limits. Deductibles also apply on reinsurance of GMIB business issued since March 1, 2005.

The Company has three retro treaties with SRZ. Pursuant to these retro treaties, the Company ceded to SRZ on a 100% coinsurance basis, subject to pre-existing reinsurance with other parties, certain blocks of business. These blocks of business include disability income and accident and health business, a mix of life and annuity insurance business, and corporate owned life insurance business.

Pursuant to the retro treaties, the Company holds certain assets, primarily policy loans and debt securities, as collateral. This collateral is reported as a liability as funds held under reinsurance treaties on the consolidated balance sheets. This funds held liability was $3.8 billion and $3.7 billion at December 31, 2019 and 2018, respectively.

The effect of reinsurance on premium was as follows (in thousands):

	Years Ended December 31,		
	2019	**2018**	**2017**
Direct premium:			
Life	$ 517,674	$ 459,025	$ 518,819
Accident and health	40,114	43,855	49,180
Plus reinsurance assumed:			
Life	44,331	41,603	68,290
Group payout annuity	406,078	4,983,165	-
Accident and health	5,885	6,898	8,098
Less reinsurance ceded:			
Life	(417,495)	(346,662)	(402,803)
Annuity guaranteed benefits	(13,458)	(14,307)	(15,227)
Accident and health	(45,999)	(50,754)	(57,278)
Total premium	$ 537,130	$ 5,122,823	$ 169,079

The effect of reinsurance on benefits was as follows (in thousands):

	Years Ended December 31,		
	2019	**2018**	**2017**
Direct benefits:			
Life	$ 1,145,775	$ 1,180,590	$ 1,261,108
Accident and health	125,245	139,546	132,471
Annuity guaranteed benefits	132,363	103,216	101,326
Plus reinsurance assumed:			
Life	244,867	239,582	248,917
Group payout annuity	523,529	125,050	-
Accident and health	25,104	24,154	26,731
Less reinsurance ceded:			
Life	(512,078)	(530,953)	(576,447)
Accident and health	(150,349)	(163,700)	(159,202)
Deferral of contract enhancements	(3,090)	(3,622)	(4,382)
Group payout annuity reserves assumed	59,089	5,482,451	-
Change in reserves, net of reinsurance	(160,448)	345,834	(7,000)
Total benefits	$ 1,430,007	$ 6,942,148	$ 1,023,522

Components of the Company's reinsurance recoverable were as follows (in thousands):

	December 31,	
	2019	**2018**
Reserves:		
Life	$ 6,420,069	$ 6,491,616
Accident and health	588,767	589,513
Guaranteed minimum income benefits	302,796	300,600
Other annuity benefits	186,836	198,540
Claims liability	895,690	915,815
Other	16,007	1,762
Total	$ 8,410,165	$ 8,497,846

Included in the reinsurance recoverable were reserves ceded to Brooke Life of $34.7 million and $36.5 million at December 31, 2019 and 2018, respectively. At December 31, 2019, the largest amount ceded to any reinsurer totaled $6.0 billion, which was primarily related to the retro treaties, which are fully collateralized.

The following table sets forth the Company's net life insurance in-force (in millions):

	December 31,	
	2019	2018
Direct life insurance in-force	$ 142,233	$ 165,033
Amounts assumed from other companies	18,206	19,214
Amounts ceded to other companies	(99,495)	(114,847)
Net life insurance in-force	$ 60,944	$ 69,400

8. Reserves for Future Policy Benefits and Claims Payable and Other Contract Holder Funds

The following table sets forth the Company's reserves for future policy benefits and claims payable balances (in thousands):

	December 31,	
	2019	2018
Traditional life	$ 5,008,949	$ 5,118,909
Guaranteed benefits	5,378,099	5,734,349
Claims payable	1,007,850	988,614
Accident and health	1,290,134	1,327,438
Group payout annuities	5,541,540	5,482,451
Other	901,869	958,038
Total	$ 19,128,441	$ 19,609,799

For traditional life insurance contracts, which include term and whole life, reserves are determined using the net level premium method and assumptions as of the issue date or acquisition date as to mortality, interest rates, persistency and expenses, plus provisions for adverse deviation. These assumptions are not unlocked unless the reserve is determined to be deficient.

The Company's liability for future policy benefits also includes liabilities for guaranteed benefits related to certain nontraditional long-duration life and annuity contracts, which are further discussed in Note 9.

The following table sets forth the Company's liabilities for other contract holder funds balances (in thousands):

	December 31,	
	2019	2018
Interest-sensitive life	$ 12,268,931	$ 12,514,825
Variable annuity fixed option	8,230,565	8,545,541
Fixed annuity	17,203,207	17,380,310
Fixed index annuity	14,058,602	11,108,471
GICs, funding agreements and FHLB advances	12,287,091	10,900,108
Total	$ 64,048,396	$ 60,449,255

For interest-sensitive life contracts, liabilities approximate the policyholder's account value, plus the remaining balance of the fair value adjustment related to previously acquired business, which is further discussed below. The liability for fixed index annuities is based on three components, 1) the imputed value of the underlying guaranteed host contract, 2) the fair value of the embedded option component of the contract, and 3) the liability for guaranteed benefits related to the optional lifetime income rider. For fixed annuities and other investment contracts, as detailed in the above table, the liability is the policyholder's account value, plus the unamortized balance of the fair value adjustment related to previously acquired business. At December 31, 2019, the Company had interest sensitive life business with minimum guaranteed interest rates ranging from 2.5% to 6.0%, with a 4.68% average guaranteed rate and fixed interest rate annuities with minimum guaranteed rates ranging from 1.0% to 5.5%, with a 2.35% average guaranteed rate.

The Company recorded a fair value adjustment related to certain annuity and interest sensitive liability blocks of business to reflect the cost of the interest guarantees within the inforce liabilities, based on the difference between the guaranteed interest rate and an assumed new money guaranteed interest rate. This adjustment was recorded in reserves for future policy benefits and claims payable. This component of the reserve is reassessed at the end of each period, taking into account changes in the inforce block. Any resulting change in the reserve is recorded as a change in reserve through the consolidated income statements.

At both December 31, 2019 and 2018, approximately 88% of the Company's fixed interest rate annuity account values correspond to crediting rates that are at the minimum guaranteed interest rates. The following tables show the distribution of the fixed interest rate annuities' account values within the presented ranges of minimum guaranteed interest rates (in millions):

	December 31, 2019			
Minimum	Account Value			
Guaranteed Interest Rate	Fixed	Fixed Index	Variable	Total
1.0%	$ 2,798.8	$ 4,151.2	$ -	$ 6,950.0
>1.0% - 2.0%	1,710.9	6,068.9	5,206.2	12,986.0
>2.0% - 3.0%	7,047.4	3,838.5	2,560.3	13,446.2
>3.0% - 4.0%	1,561.4	-	-	1,561.4
>4.0% - 5.0%	2,236.4	-	-	2,236.4
>5.0% - 5.5%	278.2	-	-	278.2
Total	$ 15,633.1	$ 14,058.6	$ 7,766.5	$ 37,458.2

	December 31, 2018			
Minimum	Account Value			
Guaranteed Interest Rate	Fixed	Fixed Index	Variable	Total
1.0%	$ 3,184.6	$ 1,887.8	$ 4,585.3	$ 9,657.7
>1.0% - 2.0%	883.4	6,377.1	1,372.9	8,633.4
>2.0% - 3.0%	7,533.5	2,843.6	2,189.6	12,566.7
>3.0% - 4.0%	1,622.5	-	-	1,622.5
>4.0% - 5.0%	2,285.4	-	-	2,285.4
>5.0% - 5.5%	286.1	-	-	286.1
Total	$ 15,795.5	$ 11,108.5	$ 8,147.8	$ 35,051.8

At both December 31, 2019 and 2018, approximately 81% of the Company's interest sensitive life business account values correspond to crediting rates that are at the minimum guaranteed interest rates. The following table shows the distribution of the interest sensitive life business account values within the presented ranges of minimum guaranteed interest rates, excluding the business that is subject to the previously mentioned retro treaties (in millions):

	December 31,	
Minimum	2019	2018
Guaranteed Interest Rate	Account Value - Interest Sensitive Life	
>2.0% - 3.0%	$ 270.6	$ 291.2
>3.0% - 4.0%	3,017.6	3,048.9
>4.0% - 5.0%	2,596.5	2,682.7
>5.0% - 6.0%	2,031.2	2,168.4
Subtotal	7,915.9	8,191.2
Retro treaties	4,353.0	4,323.6
Total	$ 12,268.9	$ 12,514.8

The Company had established a European Medium Term Note program, with up to $5.8 billion in aggregate principal amount outstanding at any one time. Jackson National Life Funding, LLC was formed as a special purpose vehicle solely for the purpose of issuing Medium Term Note instruments to institutional investors, the proceeds of which are deposited

with Jackson and secured by the issuance of funding agreements. The remaining series under this program matured in August 2019. The carrying value at December 31, 2018 totaled $(11.1) million.

The Company has established a $23.0 billion aggregate Global Medium Term Note program. Jackson National Life Global Funding was formed as a statutory business trust, solely for the purpose of issuing Medium Term Note instruments to institutional investors, the proceeds of which are deposited with Jackson and secured by the issuance of funding agreements. The carrying values at December 31, 2019 and 2018 totaled $8.9 billion and $7.3 billion, respectively.

Those Medium Term Note instruments issued in a foreign currency have been hedged for changes in exchange rates using cross-currency swaps. The fair value of derivatives embedded in funding agreements, as well as unrealized foreign currency transaction gains and losses, are included in the carrying value of the trust instruments supported by funding agreements.

Trust instrument liabilities are adjusted to reflect the effects of foreign currency translation gains and losses using exchange rates as of the reporting date. Foreign currency translation gains and losses are included in other net investment losses.

Jackson and Squire Re are members of the FHLBI primarily for the purpose of participating in the bank's mortgage-collateralized loan advance program with short-term and long-term funding facilities. Advances are in the form of short-term or long-term notes or funding agreements issued to FHLBI. At both December 31, 2019 and 2018, the Company held $125.4 million of FHLBI capital stock, supporting $2.3 billion and $2.0 billion in funding agreements, short-term and long-term borrowing capacity in 2019 and 2018, respectively.

9. Certain Nontraditional Long-Duration Contracts and Variable Annuity Guarantees

The Company issues variable contracts through its separate accounts for which investment income and investment gains and losses accrue directly to, and investment risk is borne by, the contract holder ("traditional variable annuities"). The Company also issues variable annuity and life contracts through separate accounts where the Company contractually guarantees to the contract holder ("variable contracts with guarantees") either a) return of no less than total deposits made to the account adjusted for any partial withdrawals, b) total deposits made to the account adjusted for any partial withdrawals plus a minimum return, or c) the highest account value on a specified anniversary date adjusted for any withdrawals following the contract anniversary. These guarantees include benefits that are payable in the event of death (GMDB), at annuitization (GMIB), upon the depletion of funds (GMWB) or at the end of a specified period (GMAB).

The assets supporting the variable portion of both traditional variable annuities and variable contracts with guarantees are carried at fair value and reported as summary total separate account assets with an equivalent summary total reported for separate account liabilities. Liabilities for guaranteed benefits are general account obligations and are reported in reserves for future policy benefits and claims payable. Amounts assessed against the contract holders for mortality, administrative, and other services are reported in revenue as fee income. Changes in liabilities for minimum guarantees are reported within death, other policy benefits and change in policy reserves within the consolidated income statements with the exception of changes in embedded derivatives, which are included in other net investment losses. Separate account net investment income, net investment realized and unrealized gains and losses, and the related liability changes are offset within the same line item in the consolidated income statements.

At December 31, 2019 and 2018, the Company provided variable annuity contracts with guarantees, for which the net amount at risk ("NAR") is defined as the amount of guaranteed benefit in excess of current account value, as follows (dollars in millions):

December 31, 2019	**Minimum Return**	**Account Value**	**Net Amount at Risk**	**Weighted Average Attained Age**	**Average Period until Expected Annuitization**
Return of net deposits plus a minimum return					
GMDB	0-6%	$ 150,575.7	$ 2,477.3	66.9 years	
GMWB - Premium only	0%	2,752.7	15.7		
GMWB	0-5%*	257.3	13.8		
GMAB - Premium only	0%	36.5	-		
Highest specified anniversary account value minus withdrawals post-anniversary					
GMDB		12,546.8	68.5	67.7 years	
GMWB - Highest anniversary only		3,232.4	50.9		
GMWB		697.6	55.2		
Combination net deposits plus minimum return, highest specified anniversary account value minus withdrawals post-anniversary					
GMDB	0-6%	8,158.8	686.6	70.0 years	
GMIB	0-6%	1,688.1	615.8		0.5 years
GMWB	0-8%*	140,528.5	7,159.6		

December 31, 2018	**Minimum Return**	**Account Value**	**Net Amount at Risk**	**Weighted Average Attained Age**	**Average Period until Expected Annuitization**
Return of net deposits plus a minimum return					
GMDB	0-6%	$ 125,644.3	$ 5,651.5	66.5 years	
GMWB - Premium only	0%	2,450.1	79.5		
GMWB	0-5%*	250.6	25.4		
GMAB - Premium only	0%	33.5	-		
Highest specified anniversary account value minus withdrawals post-anniversary					
GMDB		10,865.3	1,417.9	67.1 years	
GMWB - Highest anniversary only		2,827.4	400.2		
GMWB		681.6	113.4		
Combination net deposits plus minimum return, highest specified anniversary account value minus withdrawals post-anniversary					
GMDB	0-6%	6,946.7	1,549.9	69.5 years	
GMIB	0-6%	1,599.0	825.1		0.1 years
GMWB	0-8%*	116,901.6	21,441.6		

* Ranges shown based on simple interest. The upper limits of 5% or 8% simple interest are approximately equal to 4.1% and 6%, respectively, on a compound interest basis over a typical 10-year bonus period. The combination GMWB category also includes benefits with a defined increase in the withdrawal percentage under pre-defined non-market conditions.

Amounts shown as GMWB above include a 'not-for-life' component up to the point at which the guaranteed withdrawal benefit is exhausted, after which benefits paid are considered to be 'for-life' benefits. The liability related to this 'not-for-life' portion is valued as an embedded derivative, while the 'for-life' benefits are valued as an insurance liability (see below). For this table, the net amount at risk of the 'not-for-life' component is the undiscounted excess of the guaranteed withdrawal benefit over the account value, and that of the 'for-life' component is the estimated value of additional life contingent benefits paid after the guaranteed withdrawal benefit is exhausted.

Account balances of contracts with guarantees were invested in variable separate accounts as follows (in millions):

	December 31,	
Fund type:	2019	2018
Equity	$ 121,520.3	$ 99,834.2
Bond	19,340.4	17,704.9
Balanced	30,308.3	25,348.7
Money market	956.2	1,049.5
Total	$ 172,125.2	$ 143,937.3

GMDB liabilities reflected in the general account were as follows (in millions):

	2019	2018
Balance at January 1	$ 1,371.6	$ 946.6
Incurred guaranteed benefits	24.7	518.6
Paid guaranteed benefits	(113.4)	(93.6)
Balance at December 31	$ 1,282.9	$ 1,371.6

The GMDB liability is determined by estimating the expected value of death benefits in excess of the projected account balance and recognizing the excess ratably over the accumulation period based on total expected assessments. The Company regularly evaluates estimates used and adjusts the liability balance through the consolidated income statement, within death, other policy benefits and change in policy reserves, if actual experience or other evidence suggests that earlier assumptions should be revised.

The following assumptions and methodology were used to determine the GMDB liability at both December 31, 2019 and 2018 (except where otherwise noted):

1) Use of a series of stochastic investment performance scenarios, based on historical average market volatility.
2) Mean investment performance assumption of 7.4% after investment management fees, but before investment advisory fees and mortality and expense charges.
3) Mortality equal to 24% to 100% of the Annuity 2000 table (2018: 25% to 100%).
4) Lapse rates varying by contract type, duration and degree the benefit is in-the-money and ranging from 0.3% to 27.9% (before application of dynamic adjustments).
5) Discount rates: 7.4% on 2013 and later issues, 8.4% on 2012 and prior issues.

Most GMWB reserves are considered to be derivatives under current accounting guidance and are recognized at fair value, as previously defined, with the change in fair value reported in net income. The fair value of these liabilities is determined using stochastic modeling and inputs as further described in Note 5. The fair valued GMWB had a reserve liability of $2,790.5 million and $3,049.8 million at December 31, 2019 and 2018, respectively, and was reported in reserves for future policy benefits and claims payable.

Jackson has also issued certain GMWB products that guarantee payments over a lifetime. Reserves for the portion of these benefits after the point where the guaranteed withdrawal balance is exhausted are calculated using assumptions and methodology similar to the GMDB liability. At December 31, 2019 and 2018, these GMWB reserves totaled $161.3 million and $175.4 million, respectively, and were reported in reserves for future policy benefits and claims payable.

GMAB benefits were offered on some variable annuity plans. However, the Company no longer offers these benefits. The GMAB had an asset value that was immaterial to the consolidated financial statements at both December 31, 2019 and 2018, respectively.

The direct GMIB liability is determined at each period end by estimating the expected value of the annuitization benefits in excess of the projected account balance at the date of annuitization and recognizing the excess ratably over the accumulation period based on total expected assessments. The assumptions used for calculating the direct GMIB liability are consistent with those used for calculating the GMDB liability. At December 31, 2019 and 2018, GMIB reserves before reinsurance totaled $86.6 million and $109.7 million, respectively.

Other Liabilities – Insurance and Annuitization Benefits
The Company has established additional reserves for life insurance business for universal life ("UL") plans with secondary guarantees, interest-sensitive life ("ISWL") plans that exhibit "profits followed by loss" patterns and account balance adjustments to tabular guaranteed cash values on one interest-sensitive life plan.

Liabilities for these benefits have been established according to the methodologies described below:

	December 31, 2019			**December 31, 2018**		
Benefit Type	Liability (in millions)	Net Amount at Risk (in millions)	Weighted Average Attained Age	Liability (in millions)	Net Amount at Risk (in millions)	Weighted Average Attained Age
UL insurance benefit *	$ 904.1	$ 20,620.5	62.8 years	$ 890.2	$ 21,805.8	62.2 years
ISWL account balance adjustment	127.8	n/a	n/a	122.6	n/a	n/a

* Amounts for the UL benefits are for the total of the plans containing any policies having projected non-zero excess benefits and thus, may include some policies with zero projected excess benefits.

The following assumptions and methodology were used to determine the UL insurance benefit liability at December 31, 2019 and 2018:

1) Use of a series of deterministic premium persistency scenarios.
2) Other experience assumptions similar to those used in amortization of deferred acquisition costs.
3) Discount rates equal to credited interest rates, approximately 3.0% to 5.5% in both 2019 and 2018.

The Company also has a small closed block of two-tier annuities, where different crediting rates are used for annuitization and surrender benefit calculations. A liability is established to cover future annuitization benefits in excess of surrender values, and was immaterial to the consolidated financial statements at both December 31, 2019 and 2018. The Company also offers an optional lifetime income rider with certain of its fixed index annuities. The liability established for this rider was $3.3 million and $0.8 million at December 31, 2019 and 2018.

10. Debt

The aggregate carrying value of borrowings was as follows (in thousands):

	December 31,	
	2019	**2018**
	Carrying Value	**Carrying Value**
Surplus notes	$ 497,382	$ 533,351
FHLBI bank loans	77,342	82,382
Total	$ 574,724	$ 615,733

At December 31, 2019, the above borrowings were all due after five years.

Surplus notes
Under Michigan Insurance Law, for statutory reporting purposes, the surplus notes are not part of the legal liabilities of the Company and are considered surplus funds. Payments of interest or principal may only be made with the prior approval of the commissioner of insurance of the state of Michigan and only out of surplus earnings which the commissioner determines to be available for such payments under Michigan Insurance Law.

On March 15, 1997, Jackson issued 8.15% surplus notes in the principal amount of $250.0 million due March 15, 2027. These surplus notes were issued pursuant to Rule 144A under the Securities Act of 1933, and are unsecured and subordinated to all present and future indebtedness, policy claims and other creditor claims and may not be redeemed at the option of the Company or any holder prior to maturity. Interest is payable semi-annually on March 15th and September 15th of each year. Interest expense on the notes was $20.4 million in 2019, 2018, and 2017.

In conjunction with a reserve financing transaction, Squire Re II issued the Squire Surplus Note to an affiliate. The Squire Surplus Note matures December 30, 2031 and bears interest at 4.35%, payable quarterly. During 2019, 2018, and 2017 interest expense on the Squire Surplus Note was $11.0 million, $12.7 million, and $14.0 million, respectively.

Federal Home Loan Bank Loans
The Company received loans of $50.0 million from the FHLBI under its community investment program in both 2015 and 2014, which amortize on a straight line basis over the loan term. The weighted average interest rate on these loans was 2.20% in 2019 and 1.90% in 2018. The outstanding balance on these loans was $77.3 million and $82.4 million at December 31, 2019 and 2018, respectively. During 2019, 2018, and 2017, interest expense for these loans totaled $1.8 million, $1.6 million, and $805 thousand, respectively. At December 31, 2019, the loans were collateralized by mortgage-related securities and commercial mortgage loans with a carrying value of $113.5 million.

11. Federal Home Loan Bank Advances

The Company entered into a short-term advance program with the FHLBI in which interest rates were either fixed or variable based on the FHLBI cost of funds or market rates. Advances of $300.1 million and nil were outstanding at December 31, 2019 and 2018, respectively, and were recorded in other liabilities. The Company paid interest of $2.1 million, $2.6 million, and $3.4 million on such advances in 2019, 2018, and 2017, respectively.

12. Income Taxes

On December 22, 2017, the Tax Cuts and Jobs Act (the “Tax Act”) was signed into law. The Tax Act changed many aspects of the U.S. corporate income tax system, including a reduction of the U.S. federal corporate income tax rate from 35% to 21%, effective January 1, 2018. In accordance with current U.S. GAAP, the effects of changes in tax rates and laws on deferred tax balances are to be recognized in the period in which legislation is enacted. Therefore, the Company remeasured its deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is now 21%. As a result of this reduction, the Company recognized additional tax (benefit) expense of ($11.1) million and $355.4 million in 2018 and 2017, respectively, due to the rescaling of deferred tax assets and liabilities. In 2017, the Company also recognized a tax benefit of $141.0 million due to the impact of the Tax Act on deferred taxes related to unrealized holding gains and losses. In accordance with ASU No. 2018-02, “Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income,” this stranded tax benefit was reclassified from AOCI to retained earnings.

The components of the provision for federal income taxes were as follows (in thousands):

	Years Ended December 31,		
	2019	**2018**	**2017**
Current tax expense (benefit)	$ 299,543	$ 113,822	$ (218,106)
Deferred tax (benefit) expense	(672,923)	134,520	541,038
Income tax (benefit) expense	$ (373,380)	$ 248,342	$ 322,932

The federal income tax provisions differ from the amounts determined by multiplying pre-tax income attributable to Jackson by the statutory federal income tax rate of 21% for both 2019 and 2018 and 35% for 2017 as follows (in thousands):

	Years Ended December 31,		
	2019	**2018**	**2017**
Income taxes at statutory rate	$ (176,021)	$ 477,829	$ 264,111
Dividends received deduction	(170,841)	(114,574)	(346,330)
U.S. federal tax reform impact	-	(11,119)	355,432
Provision for uncertain tax benefit	-	4,818	32,178
Contribution of capitalized affiliate	-	(77,896)	-
Other	(26,518)	(30,716)	17,541
Income tax (benefit) expense	$ (373,380)	$ 248,342	$ 322,932
Effective tax rate	44.5%	10.9%	41.2%

Federal income taxes paid (received) were $379.3 million, $35.4 million, and $(13.2) million in 2019, 2018, and 2017, respectively.

The tax effects of significant temporary differences that gave rise to deferred tax assets and liabilities were as follows (in thousands):

	December 31,	
	2019	**2018**
Gross deferred tax asset		
Difference between financial reporting and the tax basis of:		
Policy reserves and other insurance items	$ 2,987,374	$ 2,741,692
Derivative investments	863,223	129,945
Deferred compensation	129,180	124,699
Net operating loss carryforward	48,091	64,869
Net unrealized loss on available for sale securities	-	117,249
Other	63,942	33,076
Total gross deferred tax asset	4,091,810	3,211,530
Gross deferred tax liability		
Difference between financial reporting and the tax basis of:		
Deferred acquisition costs and sales inducements	(2,484,066)	(2,117,561)
Other investment items	(295,062)	(330,994)
Net unrealized gains on available for sale securities	(589,366)	-
Other	(46,506)	(52,472)
Total gross deferred tax liability	(3,415,000)	(2,501,027)
Net deferred tax asset	$ 676,810	$ 710,503

The Company is required to evaluate the recoverability of its deferred tax assets and establish a valuation allowance, if necessary, to reduce its deferred tax asset to an amount that is more likely than not to be realizable. Considerable judgment and the use of estimates are required when determining whether a valuation allowance is necessary and, if so, the amount of such valuation allowance. When evaluating the need for a valuation allowance, the Company considers many factors, including: the nature and character of the deferred tax assets and liabilities; taxable income in prior carryback years; future reversals of temporary differences; the length of time carryovers can be utilized; and any tax planning strategies the Company would employ to avoid a tax benefit from expiring unused. Although realization is not assured, management believes as of December 31, 2019, it is more likely than not that the deferred tax assets will be realized. At December 31, 2019 and 2018, the Company did not have a valuation allowance.

During 2016, Jackson reached an agreement with the IRS regarding the taxation of hedging activities. This agreement requires the current taxation of all unrealized gains and losses on hedge-related investments, but then defers two-thirds of the amount ratably over the following two years. Accordingly, there is an acceleration of taxes incurred currently and a related offset to the taxes being deferred.

At December 31, 2019, the Company had a federal tax ordinary loss carryforward of $229.0 million, of which $158.0 million was attributable to a previous acquisition, which begins to expire in 2026. Section 382 of the Internal Revenue Code imposes limitations on the utilization of net operating loss carryforwards. The Section 382 limitation is an annual limitation on the amount of pre-acquisition net operating losses that a corporation may use to offset post-acquisition income. Section 382 further limits certain unrealized built-in losses at the time of acquisition. The annual limitation is approximately $21.0 million. The remaining $70.9 million of loss carryforward is attributable to NPH which was contributed to the Company as discussed in Note 1. This loss carryforward has no expiration, but is subject to an overall limitation of 80% of the tax income of the Brooke Life Consolidated tax group and the limitation on offsetting life income with non-life losses of the lesser of 35% of the loss carryforward or 35% of the tax income for the Brooke Life consolidated tax group.

The Company has considered both permanent and temporary positions in determining the unrecognized tax benefit rollforward. At December 31, 2019 and 2018, the Company held reserves related to the exclusion of short-term capital gains from the separate account dividends received deduction ("DRD") calculation and a change in the calculation of its tax basis reserves. The following table summarizes the changes in the Company's unrecognized tax benefits (in thousands):

	December 31, 2019	December 31, 2018
Unrecognized tax benefit, beginning of year	$ 36,996	$ 32,178
Additions for tax positions identified	-	4,818
Unrecognized tax benefit, end of year	$ 36,996	$ 36,996

The Company has not recorded any amounts for penalties related to unrecognized tax benefits during 2019, 2018, or 2017.

Based on information available as of December 31, 2019, the Company believes that, in the next 12 months, there are no positions for which it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease.

The Company is generally no longer subject to U.S. federal, state, and local income tax examinations by tax authorities for years prior to 2012.

13. Commitments, Contingencies, and Guarantees

The Company and its subsidiaries are involved in litigation arising in the ordinary course of business. It is the opinion of management that the ultimate disposition of such litigation will not have a material adverse affect on the Company's financial condition. Jackson has been named in civil litigation proceedings, which appear to be substantially similar to other class action litigation brought against many life insurers including allegations of misconduct in the sale of insurance products. The Company accrues for legal contingencies once the contingency is deemed to be probable and reasonably estimable. At December 31, 2019 and 2018, Jackson recorded accruals totaling $30.7 million and $28.0 million, respectively.

State guaranty funds provide payments for policyholders of insolvent life insurance companies. These guaranty funds are financed by assessing solvent insurance companies based on location, volume and types of business. The Company estimated its reserve for future state guaranty fund assessments based on data received from the National Organization of Life and Health Insurance Guaranty Associations. Based on data received, the Company's reserve for future state guaranty fund assessments was $2.6 million and $2.8 million at the end of 2019 and 2018, respectively. At December 31, 2019 and 2018, related premium tax offsets were $0.8 million and $1.0 million, respectively. While Jackson cannot predict the amount and timing of any future assessments, the Company believes the reserve is adequate for all anticipated payments for known insolvencies.

At December 31, 2019, the Company had unfunded commitments related to its investments in limited partnerships and limited liability companies totaling $888.5 million. At December 31, 2019, unfunded commitments related to commercial mortgage loans and other debt securities totaled $796.0 million.

The Company has two separate service agreements with third party administrators to provide policyholder administrative services. These agreements, subject to certain termination provisions, have ten and twelve-year terms and expire in 2020 and 2030.

14. Leases

The Company leases office space and equipment under several operating leases that expire at various dates through 2051. The Company determines if a contract is a lease at inception or modification. Lease terms may include options to extend or terminate the lease and are included in the lease measurement when it is reasonably certain that the Company will exercise that option. Right-of-use ("ROU") assets represent the right to use an underlying asset for the lease term and corresponding lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and liabilities are determined using the Company's incremental borrowings rate based upon information available at lease commencement. Certain lease incentives such as free rent periods are recorded as a reduction of the ROU asset. Lease costs for operating leases are recognized on a straight-line basis over the life of the lease.

The Company has lease agreements with both lease and non-lease components. The Company elected the practical expedient to combine lease and non-lease components for certain real estate leases.

Variable lease expenses may include changes in index-linked lease payments and certain variable operating expenses associated with real estate leases. These payments are recognized in operating expenses in the period incurred.

The Company recorded operating lease net ROU assets of $25.6 million and associated lease liabilities of $38.6 million as of December 31, 2019, classified within other assets and other liabilities, respectively. Net lease expense was $32.2 million, $40.0 million, and $32.7 million in 2019, 2018, and 2017, respectively, including expenses associated with software leases.

In 2018, the Company announced the closing of its Denver office as part of a strategic reorganization of the distribution platform. The Company determined that the lease obligation for this building exceeded the economic benefit for the remainder of the contract, resulting in an expense accrual of $8.6 million in 2018. Upon adoption of ASU 2016-02 in 2019, this expense accrual was recorded as an impairment of the associated ROU asset.

The following table summarizes the components of operating lease costs and other information related to operating leases (in thousands):

	Classification	December 31, 2019
Lease Cost:		
Operating leases [1]	Operating costs and other expenses, net of deferrals	$ 12,903
Variable lease costs	Operating costs and other expenses, net of deferrals	2,214
Sublease income	Operating costs and other expenses, net of deferrals	(3,247)
Net Lease Cost		$ 11,870
Other Information:		
Cash paid for amounts included in the measurement of operating lease liability		$ 12,167
ROU assets obtained in exchange for new lease liabilities		$ 132
Weighted average lease term		6 years
Weighted average discount rate		3.6%

[1] Operating lease costs exclude software leases, as intangible assets are excluded from the scope of Accounting Standard Codification 842, Leases.

At December 31, 2019, the maturities of operating lease liabilities were as follows (in thousands):

2020	$	10,033
2021		7,477
2022		6,242
2023		6,109
2024		4,703
Thereafter		8,672
Total	$	43,236
Less: interest		4,675
Present value of lease liabilities	$	38,561

At December 31, 2018, future minimum payments under these non-cancellable operating leases were as follows (in thousands):

2019	$	10,777
2020		10,098
2021		7,642
2022		6,296
2023		5,952
Thereafter		13,281
Total	$	54,046

15. Share-Based Compensation

Certain employees participate in various share award plans relating to Prudential shares and/or American Depositary Receipts ("ADRs") that are tradable on the New York Stock Exchange and are described below.

At certain times, the Company may grant one-off type retention awards to certain key senior executives within Jackson. These awards are subject to the prior approval of the Jackson Remuneration Committee and are nil cost awards with a contingent right to receive Prudential ADRs. The awards are contingent upon continued employment of the recipient through the award vesting date. There are no performance measurements with these awards.

The Company classifies the above plan as an equity settled plan and, therefore, reflects the net reserve related to the compensation expense and the value of the shares distributed under this plan within the consolidated statements of equity. At December 31, 2019 and 2018, the Company had $0.5 million and $3.6 million, respectively, reserved for future payments under this plan.

The Company either acquires shares/ADRs or reimburses Prudential for the costs of any shares/ADRs that were distributed to participants in the above plans, or may be distributed in the future. The shares/ADRs acquired for all the share-award plans are held at cost in a trust account for future distributions. The Company reflects the costs of shares/ADRs held within the consolidated balance sheet as shares held in trust. At December 31, 2019 and 2018, the Company had $4.3 million and $11.4 million of shares/ADRs held at cost in the trust, respectively.

The PLTIP is a Prudential incentive plan in which the Company may grant share awards to eligible employees in the form of a contingent right to receive Prudential ADRs, or a conditional allocation of Prudential ADRs, subject to the prior approval of the Jackson Remuneration Committee. These share awards vest based on the achievement of planned International Financial Reporting Standards ("IFRS") pretax operating income for the U.S. business, have vesting periods of three years and are at nil cost to the employee. Share awards vest between 0% (less than 90% of plan) and 100% (more than 110% of plan) of the grant amounts dependent on IFRS pretax operating income attained over the performance period. Award holders do not have any right to dividends or voting rights attached to the ADRs granted during the performance period. Upon vesting, a number of ADRs equivalent to the value of dividends that otherwise would have been received over the performance period are added to vested awards.

The Company classifies the above plan as liability settled plans and, therefore, reflects the accrued compensation expense and the value of the shares distributed within other liabilities. At December 31, 2019 and 2018, the Company had $85.8 million and $84.5 million, respectively, accrued for future payments under this plan.

The Company recognizes share-based compensation expense associated with the above plans based on the grant-date award fair value ratably over the requisite service period of each individual grant, which generally equals the vesting period. Additional compensation expense is recognized based on the change in fair value of the award at the end of each reporting period. The Company estimates forfeitures when calculating share-based compensation expense.

Total expense related to these share-based performance related compensation plans was as follows (in millions):

	Years Ended December 31,		
	2019	**2018**	**2017**
Prudential LTIP	$ 53.6	$ 26.6	$ 66.3
Retention Share Plan	1.2	(0.3)	4.5
Total compensation expense related to incentive plans	$ 54.8	$ 26.3	$ 70.8
Income tax benefit	$ 11.5	$ 5.5	$ 10.7

The total unrecognized compensation expense related to all share-based plans at December 31, 2019 was $66.0 million with a weighted average remaining period of 1.33 years.

During 2015 and 2019, certain one-off type retention awards were issued.

The weighted average share/ADR fair values of share-based awards granted by the PLTIP during 2019, 2018, and 2017 were $39.75, $49.44, and $42.12, respectively.

The weighted average fair value for the Company's performance awards represents the average Prudential ADR price for the thirty days following Prudential's unaudited annual earnings release date. The fair value amounts relating to the equity settled plans were determined using either the Black-Scholes or Monte Carlo option-pricing models. These models are used to calculate fair values for options and awards at the grant date based on the quoted market price of the stock at the measurement date, the dividend yield, expected volatility, risk-free interest rates and expected term.

Outstanding non-vested Prudential ADRs granted were as follows:

	Prudential LTIP	
	ADR's	Weighted Average Grant Date Fair Value
At December 31, 2017	3,691,079	$ 42.41
Granted	1,231,568	49.44
Exercised	829,976	50.47
Lapsed/Forfeited	290,968	45.56
At December 31, 2018	3,801,703	$ 42.68
Granted	1,995,888	39.75
Exercised	1,217,914	37.27
Lapsed/Forfeited	546,477	44.18
At December 31, 2019	4,033,200	$ 42.66

At December 31, 2019 and 2018, there were 33,435 and nil, respectively, non-vested Prudential ADR grants related to the one-off retention award plan, with a weighted average grant date price of $35.89 and $46.68.

16. Statutory Accounting Capital and Surplus

The Company is required to prepare statutory financial statements in accordance with statutory accounting practices prescribed or permitted by the insurance department of the state of domicile. Statutory accounting practices primarily differ from GAAP by charging policy acquisition costs to expense as incurred and establishing future policy benefit liabilities using different actuarial assumptions, as well as valuing investments and certain assets and accounting for deferred income taxes on a different basis.

Under Michigan Insurance Law, Jackson must provide notification to the Michigan commissioner of insurance prior to payment of any dividend. Ordinary dividends on capital stock may only be distributed out of earned surplus, excluding any unrealized capital gains and the effect of permitted practices (referred to as adjusted earned surplus). At December 31, 2019, the Company had $368.0 million of adjusted earned surplus available for dividends. Ordinary dividends are also limited to the greater of 10% of statutory surplus as of the preceding year-end, excluding any increase arising from the application of permitted practices, or the statutory net income, excluding any net realized investment gains, for the twelve month period ended on the preceding December 31. The commissioner may approve payment of dividends in excess of these amounts, which would be deemed an extraordinary dividend. The maximum amount that would qualify as an ordinary dividend, which would consequently be free from restriction and available for payment of dividends to Brooke Life in 2020, is estimated to be $454.2 million, subject to the availability of adjusted earned surplus as of the dividend date.

Dividends from the Company to its parent were $525.0 million, $451.9 million, and $600.5 million in 2019, 2018, and 2017, respectively. Jackson's 2019, 2018, and 2017 dividends include nil, $1.9 million, and $0.5 million, respectively, related to Jackson's forgiveness of Brooke Life's intercompany tax liability.

Statutory capital and surplus of the Company, as reported in its Annual Statement, was $4.8 billion at both December 31, 2019 and 2018. Statutory net (loss) income of the Company, as reported in its Annual Statement, was $(263.5) million, $1,896.3 million, and $168.4 million in 2019, 2018, and 2017, respectively.

Jackson had been granted a permitted practice that allowed Jackson to carry interest rate swaps at book value, as if the requirements for statutory hedge accounting were in place, instead of at fair value as would have been otherwise required. Jackson was required to demonstrate the effectiveness of its interest rate swap program pursuant to the Michigan Insurance Code. The permitted practice was annually renewed and was in place until September 30, 2019, at which time, with the approval of the Department of Insurance and Financial Services, it was terminated. At December 31, 2018, the effect of the permitted practice decreased statutory surplus by $164.7 million, net of tax. The permitted practice had no impact on statutory net income.

Under Michigan Insurance Law, VOBA is reported as an admitted asset if certain criteria are met. Pursuant to Michigan Insurance Law, the Company reported $131.0 million and $236.5 million of statutory basis VOBA at December 31, 2019 and 2018, respectively, which is fully admissible.

The NAIC has developed certain risk-based capital ("RBC") requirements for life insurance companies. Under those requirements, compliance is determined by a ratio of a company's total adjusted capital ("TAC"), calculated in a manner prescribed by the NAIC to its authorized control level RBC ("ACL RBC"), calculated in a manner prescribed by the NAIC. Companies below specific trigger points or ratios are classified within certain levels, each of which requires specified corrective action. The minimum level of TAC before corrective action commences is twice ACL RBC ("Company action level RBC"). At December 31, 2019, the Company's TAC remained well in excess of the Company action level RBC.

In addition, on the basis of statutory financial statements that insurers file with the state insurance regulators, the NAIC annually calculates twelve financial ratios to assist state regulators in monitoring the financial condition of insurance companies. A usual range of results for each ratio is used as a benchmark and departure from the usual range on four or more of the ratios can lead to inquiries from individual state insurance departments. In 2019 and 2018, there were no significant exceptions with any ratios.

17. Other Related Party Transactions

The Company's investment portfolio is managed by PPM America, Inc. ("PPMA"), a registered investment advisor,. PPMA is ultimately a wholly owned subsidiary of Prudential. The Company paid $76.8 million, $68.9 million, and $45.8 million to PPMA for investment advisory services during 2019, 2018, and 2017, respectively.

NPH, Jackson's former affiliated broker-dealer network, distributed products issued by Jackson and received commissions and fees from Jackson. Commissions and fees paid by Jackson to NPH during 2018, and 2017 totaled $5.6 million and $100.2 million, respectively. In December 2018, the broker dealers were consolidated into NPH, which was then contributed to Jackson via Brooke Life, and converted to NPH LLC.

Jackson has entered into shared services administrative agreement with both NPH and PPMA. Under the shared services administrative agreements, Jackson charged $7.8 million, $8.3 million, and $16.6 million of certain management and corporate services costs to these affiliates in 2019, 2018, and 2017, respectively.

Jackson provides a $100.0 million revolving credit facility to Brooke (Holdco1) Inc., an upstream holding company. The loan is unsecured, matures in December 2021, accrues interest at LIBOR plus 2%, and has a commitment fee of 0.10% per annum. There was no outstanding balance at both December 31, 2019 and 2018. The highest outstanding loan balance during both 2019 and 2018 was nil. During 2019, 2018, and 2017, interest and commitment fees totaled $100 thousand, $100 thousand, and $65 thousand, respectively.

Jackson provides a $40.0 million revolving credit facility to PPMA. The loan is unsecured, matures in September 2023, accrues interest at LIBOR plus 2% per annum and has a commitment fee of 0.10% per annum. There was no outstanding balance at both December 31, 2019 and 2018. The highest outstanding loan balance during both 2019 and 2018 was nil. Interest and commitment fees totaled $40 thousand, $111 thousand, and $107 thousand during 2019, 2018 and 2017, respectively.

Jackson provides a $20.0 million revolving credit facility to Jackson Holdings, LLC, an upstream holding company. The loan is unsecured, matures in June 2024, accrues interest at LIBOR plus 2% per annum and has a commitment fee of 0.25% per annum. The outstanding balance at both December 31, 2019 and 2018, was nil. The highest outstanding loan balance during 2019 and 2018 was nil and $1.5 million, respectively. Interest and commitment fees totaled $0.1 million each year for 2019, 2018, and 2017.

Jackson provides, through its PGDS subsidiary, information security and technology services to certain Prudential affiliates. Jackson recognized $3.4 million, $2.8 million, and $3.7 million of revenue associated with these services during 2019, 2018, and 2017, respectively. This revenue is included in other income in the accompanying consolidated income statements. This revenue is substantially equal to the costs incurred by PGDS to provide the services, which are reported in general and administrative expenses in the consolidated income statements.

18. Benefit Plans

The Company has a defined contribution retirement plan covering substantially all employees and certain affiliates. To be eligible to participate in the Company's contribution, an employee must have attained the age of 21, completed at least 1,000 hours of service in a 12-month period and passed their 12-month employment anniversary. In addition, the employee must be employed on the applicable January 1 or July 1 entry date. The Company's annual contributions, as declared by the board of directors, are based on a percentage of eligible compensation paid to participating employees during the year. In addition, the Company matches a participant's elective contribution, up to 6 percent of eligible compensation, to the plan during the year. The Company's expense related to this plan was $27.8 million, $31.3 million, and $29.7 million in 2019, 2018, and 2017, respectively.

The Company maintains non-qualified voluntary deferred compensation plans for certain agents and employees of Jackson and certain affiliates. At December 31, 2019 and 2018, the liability for such plans totaled $592.5 million and $559.6 million, respectively, and is reported in other liabilities. The Company's expense (income) related to these plans, including a match of elective deferrals for the agents' deferred compensation plan and the change in value of participant elected deferrals, was $69.9 million, $(1.3) million, and $41.5 million in 2019, 2018, and 2017, respectively. Jackson hedges this liability within its overall hedging strategy.

19. Operating Costs and Other Expenses

The following table is a summary of the Company's operating costs and other expenses (in thousands):

	Years Ended December 31,		
	2019	**2018**	**2017**
Commission expenses	$ 1,935,091	$ 1,804,182	$ 1,822,748
John Hancock ceding commission	(65,193)	(555,000)	-
General and administrative expenses	834,064	838,099	833,850
Deferral of policy acquisition costs	(796,908)	(747,095)	(839,143)
Total operating costs and other expenses	$ 1,907,054	$ 1,340,186	$ 1,817,455

20. Reclassifications Out of Accumulated Other Comprehensive Income

The following table represents changes in the balance of AOCI, net of income tax, related to unrealized investment gains (losses) (in thousands):

	December 31,		
	2019	**2018**	**2017**
Balance, beginning of year	$ (182,759)	$ 1,092,974	$ 597,122
OCI before reclassifications	2,593,429	(1,326,661)	406,807
Amounts reclassified from AOCI	64,789	(89,156)	89,045
Cumulative effect of changes in accounting principles	-	140,084	-
Balance, end of year	$ 2,475,459	$ (182,759)	$ 1,092,974

The following table represents amounts reclassified out of AOCI (in thousands):

AOCI Components	**Amounts Reclassified from AOCI**			**Affected Line Item in the Consolidated Income Statement**
	December 31,			
	2019	**2018**	**2017**	
Net unrealized investment loss:				
Net realized loss on investments	$ 83,037	$ (111,028)	$ 137,686	Other net investment losses
Other-than-temporary impairments	(1,025)	(1,828)	(693)	Total other-than-temporary impairments
Net unrealized loss before income taxes	82,012	(112,856)	136,993	
Income tax (expense) benefit	(17,223)	23,700	(47,948)	
Reclassifications, net of income taxes	$ 64,789	$ (89,156)	$ 89,045	