

TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA

Audited Statutory – Basis Financial Statements as of December 31, 2019 and 2018 and for the three years ended December 31, 2019

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Report of Independent Auditors

To the Board of Trustees of Teachers Insurance and Annuity Association of America

We have audited the accompanying statutory-basis financial statements of Teachers Insurance and Annuity Association of America, which comprise the statutory-basis statements of admitted assets, liabilities and capital and contingency reserves as of December 31, 2019 and 2018, and the related statutory-basis statements of operations, of changes in capital and contingency reserves, and of cash flows for each of the three years in the period ended December 31, 2019.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the statutory-basis financial statements in accordance with the accounting practices prescribed or permitted by the New York State Department of Financial Services. Management is also responsible for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of statutory-basis financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the statutory-basis financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the statutory-basis financial statements are free from material misstatement.

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

Basis for Adverse Opinion on U.S. Generally Accepted Accounting Principles

As described in Note 2 to the statutory-basis financial statements, the statutory-basis financial statements are prepared by the Company on the basis of the accounting practices prescribed or permitted by the New York State Department of Financial Services, which is a basis of accounting other than accounting principles generally accepted in the United States of America.

The effects on the statutory-basis financial statements of the variances between the statutory basis of accounting described in Note 2 and accounting principles generally accepted in the United States of America, although not reasonably determinable, are presumed to be material.



Adverse Opinion on U.S. Generally Accepted Accounting Principles

In our opinion, because of the significance of the matter discussed in the "Basis for Adverse Opinion on U.S. Generally Accepted Accounting Principles" paragraph, the statutory-basis financial statements referred to above do not present fairly, in accordance with accounting principles generally accepted in the United States of America, the financial position of the Company as of December 31, 2019 and 2018 or the results of its operations or its cash flows for each of the three years in the period ended December 31, 2019.

Opinion on Statutory Basis of Accounting

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In our opinion, the statutory-basis financial statements referred to above present fairly, in all material respects, the admitted assets, liabilities and capital and contingency reserves of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in accordance with the accounting practices prescribed or permitted by the New York State Department of Financial Services described in Note 2.

New York, New York March 11, 2020

TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA STATUTORY - BASIS STATEMENTS OF ADMITTED ASSETS, LIABILITIES AND CAPITAL AND CONTINGENCY RESERVES

		December 31,							
		2019		2018					
ADMITTED ASSETS	(in	millions, excep	t sha	re amounts)					
Bonds	\$	189,018	\$	187,325					
Preferred stocks		415		245					
Common stocks		5,657		5,899					
Mortgage loans		32,441		29,959					
Real estate		3,686		2,152					
Cash, cash equivalents and short-term investments		902		598					
Contract loans		1,803		1,890					
Derivatives		794		968					
Securities lending collateral assets		363		562					
Other long-term investments		31,600		30,413					
Investment income due and accrued		1,823		1,802					
Net deferred federal income tax asset		2,406		2,402					
Other assets		860		782					
Separate account assets		43,827		38,289					
TOTAL ADMITTED ASSETS	\$	315,595	\$	303,286					
LIABILITIES, CAPITAL AND CONTINGENCY RESERVES									
Liabilities									
Reserves for life and health insurance, annuities and deposit-type contracts	\$	217,761	\$	213,138					
Dividends due to policyholders		1,896		1,885					
Interest maintenance reserve		2,090		2,149					
Federal income taxes payable to affiliates		14		45					
Asset valuation reserve		6,323		5,260					
Derivatives		198		164					
Payable for collateral for securities loaned		363		562					
Other liabilities		4,313		3,712					
Separate account liabilities		43,765		38,245					
TOTAL LIABILITIES		276,723		265,160					
Capital and Contingency Reserves									
Capital (2,500 shares of \$1,000 par value common stock issued and outstanding and \$550,000 paid-in capital)		3		3					
Surplus notes		5,041		5,041					
Contingency reserves:									
For investment losses, annuity and insurance mortality, and other risks		33,828		33,082					
TOTAL CAPITAL AND CONTINGENCY RESERVES		38,872		38,126					
TOTAL LIABILITIES, CAPITAL AND CONTINGENCY RESERVES	\$	315,595	\$	303,286					

TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA STATUTORY - BASIS STATEMENTS OF OPERATIONS

	For the Years Ended December 31,							
		2019		2018		2017		
			(ir	millions)				
REVENUES								
Insurance and annuity premiums and other considerations	\$	16,003	\$	16,220	\$	16,644		
Annuity dividend additions		1,520		1,761		1,503		
Net investment income		12,324		12,550		11,875		
Other revenue		458		379		371		
TOTAL REVENUES	\$	30,305	\$	30,910	\$	30,393		
BENEFITS AND EXPENSES								
Policy and contract benefits	\$	17,803	\$	17,694	\$	16,206		
Dividends to policyholders		3,267		3,526		3,212		
Increase in policy and contract reserves		4,117		5,279		6,115		
Net operating expenses		2,003		1,882		2,123		
Net transfers to separate accounts		1,158		442		1,123		
TOTAL BENEFITS AND EXPENSES	\$	28,348	\$	28,823	\$	28,779		
Income before federal income taxes and net realized capital gains (losses)	\$	1,957	\$	2,087	\$	1,614		
Federal income tax expense (benefit)		17		(23)		(4)		
Net realized capital gains (losses) less capital gains taxes, after transfers to the interest maintenance reserve		(322)		(657)		(598)		
NET INCOME	\$	1,618	\$	1,453	\$	1,020		

TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA STATUTORY - BASIS STATEMENTS OF CHANGES IN CAPITAL AND CONTINGENCY RESERVES

	and Ac	l Stock Iditional Capital	Surp	lus Notes	Con Re	itingency eserves	Total
		<u> </u>		(in mil			
Balance, December 31, 2016	\$	3	\$	4,000	\$	31,580	\$ 35,583
Net income		_		_		1,020	1,020
Change in net unrealized capital gains on investments		_		_		1,070	1,070
Change in asset valuation reserve		_		_		(1,221)	(1,221)
Change in net deferred income tax		_		_		(4,554)	(4,554)
Change in post-retirement benefit liability		_		_		(5)	(5)
Change in non-admitted assets:							
Deferred federal income tax asset		_		_		3,310	3,310
Other assets		_		_		92	92
Issuance of surplus notes		_		1,041			1,041
Balance, December 31, 2017	\$	3	\$	5,041	\$	31,292	\$ 36,336
Net income		_		_		1,453	1,453
Change in net unrealized capital gains on						1,400	1,400
investments		_		_		(359)	(359)
Change in asset valuation reserve		_				128	128
Change in net deferred income tax		_		_		(147)	(147)
Change in post-retirement benefit liability		_		_		7	7
Change in non-admitted assets:							
Deferred federal income tax asset		_		_		585	585
Other assets		_		_		123	123
Balance, December 31, 2018	\$	3	\$	5,041	\$	33,082	\$ 38,126
Net income		_		_		1,618	1,618
Change in net unrealized capital gains on investments		_		_		118	118
Change in asset valuation reserve		_		_		(1,063)	(1,063)
Change in net deferred income tax		_		_		(284)	(284)
Change in post-retirement benefit liability		_		_		(8)	(8)
Change in non-admitted assets:						(-)	(-)
Deferred federal income tax asset		_		_		288	288
Other assets		_		_		77	77
Balance, December 31, 2019	\$	3	\$	5,041	\$	33,828	\$ 38,872

TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA STATUTORY - BASIS STATEMENTS OF CASH FLOWS

	For the Years Ended December 31,							
	2019	2018	2017					
CASH FROM OPERATIONS		(in millions)						
Insurance and annuity premiums and other considerations	\$ 16,008	\$ 16,225	\$ 16,650					
Net investment income	11,669	11,756	11,301					
Miscellaneous income	440	365	361					
Total receipts	28,117	28,346	28,312					
Policy and contract benefits	17,763	17,633	16,128					
Operating expenses	1,981	1,865	1,729					
Dividends paid to policyholders	1,737	1,764	1,756					
Federal income tax expense (benefit)	49	(63)	(16)					
Net transfers to separate accounts	1,158	442	1,127					
Total disbursements	22,688	21,641	20,724					
Net cash from operations	5,429	6,705	7,588					
CASH FROM INVESTMENTS								
Proceeds from investments sold, matured, or repaid:								
Bonds	17,608	17,950	27,267					
Stocks	2,097	1,891	1,298					
Mortgage loans and real estate	2,479	2,880	1,464					
Other invested assets	1,976	2,368	2,213					
Miscellaneous proceeds	611	1,182	52					
Cost of investments acquired:								
Bonds	18,624	19,838	25,622					
Stocks	2,232	1,716	3,489					
Mortgage loans and real estate	6,368	6,482	6,684					
Other invested assets	3,041	4,483	3,923					
Miscellaneous applications	71	513	1,076					
Net cash used in investments	(5,565	(6,761)	(8,500)					
CASH FROM FINANCING AND OTHER								
Proceeds from issuance of surplus notes	_		1,994					
Extinguishment of surplus notes	_		(950)					
Premium paid on extinguishment of surplus notes	_	_	(373)					
Net deposits on deposit-type contracts funds	465	15	24					
Other cash provided (applied)	(25) (1)	252					
Net cash from financing and other	440	14	947					
NET CHANGE IN CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS	304	(42)	35					
CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS, BEGINNING OF YEAR	598	640	605					
CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS, END OF YEAR	\$ 902	\$ 598	\$ 640					

Note 1 - Organization

Teachers Insurance and Annuity Association of America ("TIAA" or the "Company") was established in 1918 as a legal reserve life insurance company under the insurance laws of the State of New York. All of the outstanding common stock of TIAA is held by the TIAA Board of Overseers ("Board of Overseers"), a not-for-profit corporation incorporated in the State of New York originally created for the purpose of holding the stock of TIAA.

The Company's primary purpose is to aid and strengthen non-profit educational and research organizations, governmental entities and other non-profit institutions by providing retirement and insurance benefits for their employees and their families and by counseling such organizations and their employees on benefit plans and other measures of economic security. In addition, TIAA may otherwise engage in any business permitted under the New York Insurance Law for a domestic life stock insurance company, provided that such business supports this purpose, including without limitation by (i) enhancing the creditworthiness, financial strength and reputation of TIAA, (ii) providing all of the holders and beneficiaries of TIAA's contracts and policies with benefits of scale, increased diversity in offered products and newly innovated products and (iii) providing for additional infrastructure and support to TIAA.

Note 2 - Significant Accounting Policies

Basis of Presentation:

The financial statements of Teachers Insurance and Annuity Association of America ("TIAA" or the "Company") are presented on the basis of statutory accounting principles prescribed or permitted by the New York State Department of Financial Services ("NYDFS" or the "Department"). The Department requires insurance companies domiciled in the State of New York to prepare their statutory-basis financial statements in accordance with the National Association of Insurance Commissioners' ("NAIC") Accounting Practices and Procedures Manual ("NAIC SAP"), subject to any deviation prescribed or permitted by the Department ("New York SAP").

The table below provides a reconciliation of the Company's net income and capital and contingency reserves between NAIC SAP and the New York SAP annual statement filed with the Department. The additional reserve for the term conversions results from the Department requiring in Regulation No. 147 (11NYCRR 98) Valuation of Life Insurance Reserves Section 98.4 for any policy which guarantees renewal, or conversion to another policy, without evidence of insurability, additional reserves shall be held that account for excess mortality due to anti-selection with appropriate margins to cover expenses and risk of moderately adverse deviations in experience.

				For the Ye	ecember 31,			
	SSAP#	F/S Line	2019		2019 2018			2017
					(in	millions)		
Net income, New York SAP			\$	1,618	\$	1,453	\$	1,020
New York SAP Prescribed Practices that are an increase/(decrease) to NAIC SAP:								
Additional reserves for term conversions	51R	Increase in policy and contract reserves		(1)				1
Net income (loss), NAIC SAP			\$	1,617	\$	1,453	\$	1,021
Capital and surplus, New York SAP			\$	38,872	\$	38,126	\$	36,336
New York SAP Prescribed Practices that are an increase/(decrease) to NAIC SAP:								
Additional reserves for term conversions	51R	Reserves for life and health insurance, annuities		21		22		22
Additional reserves for term conversions	SIK	and deposit-type contracts						
Capital and surplus, NAIC SAP			\$	38,893	\$	38,148	\$	36,358

The Company's risk based capital as of December 31, 2019 and 2018 would not have triggered a regulatory event without the use of the New York SAP prescribed practices.

Accounting Principles Generally Accepted in the United States: The Financial Accounting Standards Board ("FASB") dictates the accounting principles for financial statements that are prepared in conformity with Generally Accepted Accounting Principles ("GAAP") with applicable authoritative accounting pronouncements. As a result, the Company cannot refer to financial statements prepared in accordance with NAIC SAP and New York SAP as having been prepared in accordance with GAAP.

The primary differences between GAAP and NAIC SAP can be summarized as follows:

Under GAAP:

- Investments in bonds considered to be "available for sale" are carried at fair value rather than at amortized cost under NAIC SAP;
- Impairments on securities (other than loan-backed and structured securities) due to credit losses are recorded
 as other-than-temporary impairments ("OTTI") through earnings for the difference between amortized cost and
 discounted cash flows when a security is deemed impaired. Other declines in fair value related to factors other
 than credit are recorded as other comprehensive income, which is a separate component of stockholder's equity.
 Under NAIC SAP, an impairment for such securities is recorded through earnings for the difference between
 amortized cost and fair value:
- For loan-backed and structured securities that are other-than-temporarily impaired, declines in fair value related
 to factors other than credit are recorded as other comprehensive income, which is a separate component of
 stockholder's equity. Under NAIC SAP, such declines in fair value are not recorded until a credit loss occurs;
- Changes in the allowance for estimated uncollectible amounts related to mortgage loans are recorded through earnings rather than as unrealized losses on impairments included in the Asset Valuation Reserve, which is a component of surplus under NAIC SAP;
- If in the aggregate, the Company has a net negative cash balance, the negative cash is recorded as a liability rather than as a negative asset under NAIC SAP;
- Changes in the value of certain other long-term investments accounted for under the equity method of accounting
 are recorded through earnings rather than as unrealized gains (losses), which is a component of surplus under
 NAIC SAP:
- Investments in wholly-owned subsidiaries, other entities under the control of the parent, and certain variable
 interest entities are consolidated in the parent's financial statements rather than being carried at the parent's
 share of the underlying GAAP equity or statutory surplus of a domestic insurance subsidiary under NAIC SAP;
- Contracts that contain an embedded derivative are bifurcated from the host contract and accounted for separately
 under GAAP, whereas under NAIC SAP, the embedded derivative is not bifurcated between components and is
 accounted for as part of the host contract;
- Certain assets designated as "non-admitted assets" and excluded from assets in the statutory balance sheet are included in the GAAP balance sheet;
- Surplus notes are reported as a liability rather than a component of capital and contingency reserves under NAIC SAP;
- The Asset Valuation Reserve ("AVR") is not recognized under GAAP. The AVR is established under NAIC SAP with changes recorded as a direct charge to surplus;
- The Interest Maintenance Reserve ("IMR") is not recognized under GAAP. The realized gains and losses resulting
 from changes in interest rates are reported as a component of net income under GAAP rather than being deferred
 and subsequently amortized into income over the remaining expected life of the investment sold under NAIC
 SAP;

- Dividends on participating policies are accrued when earned under GAAP rather than being recognized for the year when they are approved under NAIC SAP;
- Policy acquisition costs, such as commissions, and other costs incurred in connection with acquiring new business, are deferred and amortized over the expected lives of the policies issued rather than being expensed when incurred under NAIC SAP;
- Policy and contract reserves are based on management's best estimates of expected mortality, morbidity, persistency and interest rather than being based on statutory mortality, morbidity and interest requirements under NAIC SAP;
- Deferred income taxes, subject to valuation allowance, include federal and state income taxes and changes in the deferred tax are reflected in earnings. Under NAIC SAP, deferred taxes exclude state income taxes and are admitted to the extent they can be realized within three years subject to a 15% limitation of capital and surplus with changes in the net deferred tax reflected as a component of surplus;
- Contracts that do not subject the Company to risks arising from policyholder mortality or morbidity are reported
 as a deposit liability. Under NAIC SAP, an annuity contract containing a life contingency is required to be classified
 as a life insurance contract, regardless of the significance of any mortality and morbidity risk, and amounts received
 and paid under these contracts are reported as revenue and benefits, respectively;
- Assets and liabilities are reported gross of reinsurance under GAAP and net of reinsurance under NAIC SAP.
 Certain reinsurance transactions are accounted for as financing transactions under GAAP and as reinsurance under NAIC SAP. Transactions recorded as financing have no impact on premiums or losses incurred, while under NAIC SAP, premiums paid to the reinsurer are recorded as ceded premiums (a reduction in revenue) and expected reimbursement for losses from the reinsurer are recorded as a reduction in losses;
- When reserves ceded to an unauthorized reinsurer exceed the assets or letters of credit supporting the reserves
 no liability is established under GAAP. Under NAIC SAP, a liability is established and changes to these amounts
 are credited or charged directly to unassigned surplus (deficit).
- Revenue recognition for administrative service expense reimbursements are recognized as gross revenue and
 gross expense in the Statements of Operations when the Company is the principal in the transaction and where
 the Company controls the administrative services before transferring them to the customer. Under NAIC SAP, the
 administration expenses incurred are included in operating expenses and any offsetting reimbursements are
 netted against operating expenses.

The effects of these differences, while not determined, are presumed to be material.

Use of Estimates: The preparation of statutory-basis financial statements requires management to make estimates and assumptions that impact the reported amounts of assets and liabilities at the date of the financial statements. Management is also required to disclose contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results may differ from those estimates.

The most significant estimates include those used in the recognition of other-than-temporary impairments, reserves for life and health insurance, annuities and deposit-type contracts and the valuation of deferred tax assets.

Reclassifications: Certain prior year amounts within these financial statement footnotes have been reclassified to conform to the current year presentation. No reclassifications were made to the Statements of Admitted Assets, Liabilities, and Capital and Contingency Reserves and the related Statements of Operations, Changes in Capital and Contingency Reserves, and Cash Flows.

Accounting Policies:

The following is a summary of the significant accounting policies followed by the Company:

Bonds: Bonds are stated at amortized cost using the constant yield method. Bonds in or near default (rated NAIC 6) are stated at the lower of amortized cost or fair value. NAIC ratings are applied to bonds and other securities. Categories 1 and 2 are considered investment grade, while Categories 3 through 6 are considered below investment grade. Bonds are recorded on a trade date basis, except for private placement bonds, which are recorded on the funding date. Bonds the Company intends to sell prior to maturity ("held for sale") are stated at the lower of amortized cost or fair value. Exchange traded funds ("ETFs") identified as qualifying for bond treatment are stated at fair value.

Included within bonds are loan-backed and structured securities. Estimated future cash flows and expected prepayment speeds are used to determine the amortization of loan-backed and structured securities under the prospective method. Expected future cash flows and prepayment speeds are evaluated quarterly. Certain loan-backed and structured securities are reported at the lower of amortized cost or fair value as a result of the NAIC modeling process.

If it is determined that a decline in the fair value of a bond, excluding loan-backed and structured securities, is other-than-temporary, the cost basis of the bond is written down to fair value and the amount of the write down is accounted for as a realized loss. The new cost basis is not changed for subsequent recoveries in fair value. Future declines in fair value which are determined to be other-than-temporary are recorded as realized losses.

For loan-backed and structured securities which the Company has the intent and ability to hold for a period of time sufficient to recover the amortized cost basis, when an OTTI has occurred because the Company does not expect to recover the entire amortized cost basis of the security, the amount of the OTTI recognized as a realized loss is the difference between the security's amortized cost basis and the present value of cash flows expected to be collected, discounted at the loan-backed or structured security's effective interest rate.

For loan-backed and structured securities, when an OTTI has occurred because the Company intends to sell the security or does not have the intent and ability to retain the security for a period of time sufficient to recover the amortized cost basis, the amount of the OTTI realized is the difference between the security's amortized cost basis and fair value at the balance sheet date.

In periods subsequent to the recognition of an OTTI loss for a loan-backed or structured security, the Company accounts for the other-than-temporarily impaired security as if the security had been purchased on the measurement date of the impairment. The difference between the new amortized cost basis and the cash flows expected to be collected is accreted as interest income in future periods based on prospective changes in cash flow estimates.

Preferred Stocks: Preferred stocks are stated at amortized cost unless they have an NAIC rating designation of 4, 5, or 6 which are stated at the lower of amortized cost or fair value. When it is determined that a decline in fair value of an investment is other-than-temporary, the cost basis of the investment is reduced to its fair value and the amount of the reduction is accounted for as a realized loss.

Common Stocks: Unaffiliated common stocks are stated at fair value, which is based on quoted market prices, where available. Changes in fair value are recorded through surplus as an unrealized gain or loss. When it is determined that a decline in fair value of an investment is other-than-temporary, the cost basis of the investment is reduced to its fair value and the amount of the reduction is accounted for as a realized loss.

Investments in subsidiary, controlled and affiliated ("SCA") entities are stated at the value of their underlying net assets as follows: (1) domestic insurance subsidiaries are stated at the value of their underlying statutory surplus, and (2) non-insurance subsidiaries are stated at the value of their underlying audited GAAP equity. Dividends and distributions from subsidiaries are recorded in investment income to the extent they are not in excess of the investee's undistributed accumulated earnings, and changes in the equity of subsidiaries are recorded directly to surplus as unrealized gains or losses.

Mortgage Loans: Mortgage loans are stated at amortized cost, net of valuation allowances. Amortized cost consists of the unpaid principal balance of the loans, net of unamortized premiums, discounts, and certain mortgage origination fees. Mortgage loans held for sale are stated at the lower of amortized cost or fair value. Mortgage loans are evaluated for impairment when it is probable that the receipt of contractual payments of principal and interest may not occur when scheduled. If the impairment is considered to be temporary, a valuation allowance is established for the excess of the carrying value of the mortgage over its estimated fair value. Changes in valuation allowance for mortgage loans are included in net unrealized capital gains and losses on investments. When an event occurs resulting in an impairment that is other-than-temporary, a direct write-down is recorded as a realized loss and a new cost basis is established. The fair value of mortgage loans is generally determined using a discounted cash flow methodology based on coupon rates, maturity provisions and credit assumptions.

Real Estate: Real estate occupied by the Company and real estate held for the production of income is carried at depreciated cost, less encumbrances. Real estate held for sale is carried at the lower of depreciated cost or fair value, less encumbrances, and estimated costs to sell. The Company utilizes the straight-line method of depreciation on real estate and it is generally computed over a forty-year period. A real estate property may be considered impaired when events or circumstances indicate that the carrying value may not be recoverable. When the Company determines that an investment in real estate is impaired, a direct write-down is made to reduce the carrying value of the property to its estimated fair value based on an external appraisal, net of encumbrances, and a realized loss is recorded. The Company makes investments in commercial real estate directly, through SCA entities and through real estate limited partnerships which are included in Other Long-term Investments. The Company monitors the effects of current and expected market conditions and other factors on its real estate investments to identify and quantify any impairment in value. The Company assesses assets to determine if events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. The Company evaluates the recoverability of income producing directly held Real Estate investments based on undiscounted cash flows and then reviews the results of an independent third party appraisal to determine the fair value and if an impairment is required.

Other Long-term Investments: Other long-term investments primarily include investments in joint ventures, partnerships, and limited liability companies which are stated at cost, adjusted for the Company's percentage of the most recent available financial statements based on the underlying GAAP or International Financial Reporting Standards as reflected on the respective entity's financial statements.

The Company monitors the effects of current and expected market conditions and other factors on these investments to identify and quantify any impairment in value. The Company assesses the investments for potential impairment by performing analysis between the fair value and the cost basis of the investments. The Company evaluates recoverability of the Company's direct investment to determine if OTTI is warranted. When it is determined that a decline in fair value of an investment is other-than-temporary, the cost basis of the investment is reduced to its fair value, and the amount of the reduction is accounted for as a realized loss.

Investments in non-insurance SCA entities are stated at the value of their underlying audited equity. Dividends and distributions from subsidiaries are recorded in investment income to the extent they are not in excess of the investee's undistributed accumulated earnings, and changes in the equity of subsidiaries are recorded directly to surplus as unrealized gains or losses.

Other long-term investments include the Company's investments in surplus notes, which are stated at amortized cost. All of the Company's investments in surplus notes have a NAIC 1 rating designation.

Cash and Cash Equivalents: Cash includes cash on deposit and cash equivalents. Cash equivalents are short-term, highly liquid investments with original maturities of three months or less at the date of purchase and are stated at amortized cost. If in the aggregate, the Company has a net negative cash balance, the negative cash is recorded as a negative asset.

Short-Term Investments: Short-term investments (investments with remaining maturities greater than three months and less than or equal to 12 months at the time of acquisition, excluding those investments classified as cash equivalents) that are not impaired are stated at amortized cost using the straight line interest method. Short-term investments that are impaired are stated at the lower of amortized cost or fair value.

Contract Loans: Contract loans are stated at outstanding principal balances. Interest income accrued on contract loans past due 90 days or more are included in the unpaid balance of the loan. The excess of unpaid contract loan balances over the cash surrender value, if any, is non-admitted and reflected as an adjustment to surplus. Interest income on such contract loans is recorded as earned using the contractually agreed upon interest rate.

Derivative Instruments: The Company designates its derivative transactions as hedging or replication transactions. Derivatives that qualify and are designated for hedge accounting are reported as assets or liabilities on the balance sheet and accounted for in a manner consistent with the hedged item. Swap coupon cash flows and income accruals are reported as a component of net investment income. Upon termination, the gain or loss on these contracts is recognized in a manner consistent with the disposed hedged item.

Derivatives used in hedging relationships that do not qualify or are not designated for hedge accounting are carried at fair value. Changes in fair value are reported in surplus as net unrealized capital gains (losses). Swap coupon cash flows and income accruals are reported as a component of net investment income. Upon termination the gain or loss on these contracts is recognized as realized capital gains (losses) and is subject to Interest Maintenance Reserve ("IMR") or Asset Valuation Reserve ("AVR") treatment.

Derivatives used in replication transactions are accounted for in a manner consistent with the cash instrument and the replicated asset. Accordingly, these derivatives are carried at amortized cost or fair value. Amortization of derivative premiums is reported as a component of net investment income. Swap coupon cash flows and income accruals are recorded as a component of net investment income. Upon termination, the gain or loss on these contracts is recognized as realized capital gains (losses) and is subject to IMR or AVR treatment.

The Company does not offset the carrying values recognized in the balance sheet for derivatives executed with the same counterparty under the same master netting agreement.

Investment Income Due and Accrued: Investment income due is investment income earned and legally due to be paid to the Company at the reporting date. Investment income accrued is investment income earned but not legally due to be paid to the Company until subsequent to the reporting date. The Company writes off amounts deemed uncollectible as a charge against investment income in the period such determination is made. Amounts deemed collectible, but over 90 days past due for any invested asset except mortgage loans in default are non-admitted. Amounts deemed collectible, but over 180 days past due for mortgage loans in default are non-admitted. The Company accrues interest income on impaired loans to the extent it is deemed collectible.

Separate Accounts: Separate Accounts are established in conformity with insurance laws, are segregated from the Company's general account and are maintained for the benefit of separate account contract holders. Separate accounts are accounted for at fair value, except the TIAA Stable Value Separate Account, which supports book value separate account agreements, in which case the assets are accounted for at amortized cost. Separate account liabilities reflect the contractual obligations of the insurer arising out of the provisions of the insurance contract.

Foreign Currency Transactions and Translation: Investments denominated in foreign currencies and foreign currency contracts are valued in U.S. dollars, based on exchange rates at the balance sheet date. Investment transactions in foreign currencies are recorded at the exchange rates prevailing on the respective transaction dates. All other asset and liability accounts denominated in foreign currencies are adjusted to reflect exchange rates at the balance sheet date. Realized and unrealized gains and losses due to foreign exchange transactions and translation adjustments are not separately reported but are collectively included in realized and unrealized capital gains and losses, respectively.

Non-Admitted Assets: For statutory accounting purposes, certain assets are designated as non-admitted assets. Changes in non-admitted assets are reported as a direct adjustment to surplus.

At December 31, the major categories of assets that are non-admitted are as follows (in millions):

	2019			2018	Change		
Net deferred federal income tax asset	\$	2,847	\$	3,135	\$	(288)	
Furniture and electronic data processing equipment		363		430		(67)	
Other long-term investments		157		167		(10)	
Other		167		167			
Total	\$	3,534	\$	3,899	\$	(365)	

Electronic Data Processing Equipment, Computer Software, Furniture and Equipment and Leasehold Improvements: Electronic data processing ("EDP") equipment, computer software and furniture and equipment which qualify for capitalization are depreciated over the lesser of useful life or 3 years. Office alterations and leasehold tenant improvements which qualify for capitalization are depreciated over the lesser of useful life or 5 years or the remaining life of the lease, respectively.

At December 31, the accumulated depreciation on EDP equipment, computer software, furniture and equipment and leasehold improvements is as follows (in millions):

		2019			
EDP equipment and computer software	\$	1,834	\$	1,691	
Furniture and equipment and leasehold improvements	\$	116	\$	117	

Repurchase Agreement: Repurchase agreements are agreements between a seller and a buyer, whereby the seller of securities sells and simultaneously agrees to repurchase the same or substantially the same securities from the buyer at a stated price on a specified date. Repurchase agreements are generally accounted for as secured borrowings. The assets transferred are not removed from the balance sheet; the cash collateral received is reported on the balance sheet with an offsetting liability reported in "Other liabilities."

Securities Lending Program: The Company has a securities lending program whereby it may lend securities to qualified institutional borrowers to earn additional income. The Company receives collateral (in the form of cash) against the loaned securities and maintains collateral in an amount not less than 102% of the market value of loaned securities during the period of the loan. The cash collateral received is reported in "Securities lending collateral assets" with an offsetting collateral liability included in "Payable for collateral for securities loaned." Securities lending income is recorded in the accompanying Statements of Operations in "Net investment income."

Insurance and Annuity Premiums and Other Considerations: Life insurance premiums are recognized as revenue over the premium-paying period of the related policies. Annuity premiums and other considerations, including consideration on annuity product rollovers, are recognized as revenue when received. Deposits on deposit-type contracts are recorded directly as a liability when received. Expenses incurred when acquiring new business are charged to operations as incurred.

Reserves for Life and Health Insurance, Annuities and Deposit-type Contracts: Policy and contract reserves are determined in accordance with standard valuation methods approved by the Department and are computed in accordance with standard actuarial methodology. The reserves established utilize assumptions for interest, mortality and other risks insured. Such reserves are established to provide for adequate contractual benefits guaranteed under policy and contract provisions.

Liabilities for deposit-type contracts, which do not contain any life contingencies, are equal to deposits received and interest credited to the benefit of contract holders, less surrenders or withdrawals (that represent a return to the contract holders) plus additional reserves (if any) necessitated by actuarial regulations. Funding agreements used in an investment spread capacity are also included within deposit-type contracts.

Asset Valuation Reserve and Interest Maintenance Reserve: Mandatory reserves have been established for the General Account and Separate Account investments, where required. Such reserves consist of the AVR for potential credit-related losses on applicable General Account and Separate Account invested assets. Changes to the AVR are reported as direct additions to or deductions from surplus. An IMR is established for interest-related realized capital gains (losses) resulting from changes in the general level of interest rates for the General Account, as well as any Separate Accounts, not carried at fair value. Transfers to the IMR are deducted from realized capital gains and losses and are net of related federal income tax. IMR amortization, as calculated under the grouped method, is included in net investment income. Net realized capital gains (losses) are presented net of federal income tax expense or benefit and IMR transfer. For bonds, excluding loan-back and structured securities, losses from other-than-temporary impairments are recorded entirely to either the AVR or the IMR in accordance with the nature of the impairment.

Net Realized Capital Gains (Losses): Realized capital gains (losses), net of taxes, exclude gains (losses) deferred into the IMR and gains (losses) of the separate accounts. Realized capital gains (losses), including OTTI, are recognized in net income and are determined using the specific identification method.

Dividends Due to Policyholders: Dividends on insurance policies and pension annuity contracts in the payout phase are declared by the TIAA Board of Trustees (the "Board") and recorded in December of each year. Dividends on pension annuity contracts in the accumulation phase are declared by the Board in February of each year, and such dividends on the various existing vintages of pension annuity contracts in the accumulation phase are credited to policyholders during the ensuing twelve month period beginning March 1.

Federal Income Taxes: Current federal income taxes are charged or credited based upon amounts estimated to be payable or recoverable as a result of operations for the current year and any adjustments to such estimates from prior years. Deferred federal income tax assets ("DTAs") and deferred federal income tax liabilities ("DTLs") are recognized for expected future tax consequences of temporary differences between statutory and taxable income. Temporary differences are identified and measured using a balance sheet approach whereby statutory and tax balance sheets are compared. Changes in DTAs and DTLs are recognized as a separate component of surplus. Net DTAs are admitted to the extent permissible under NAIC SAP. Gross DTAs are reduced by a statutory valuation allowance if it is more likely than not that some portion or all of the gross DTA will not be realized. The Company is required to establish a tax loss contingency if it is more likely than not that a tax position will not be sustained. The amount of the contingency reserve is management's best estimate of the amount of the original tax benefit that could be reversed upon audit, unless the best estimate is greater than 50% of the original tax benefit, in which case the reserve is equal to the entire tax benefit.

The Company files a consolidated federal income tax return with its includable insurance and non-insurance subsidiaries. The consolidating companies participate in tax allocation agreements. The tax allocation agreements provide that each member of the group is allocated its share of the consolidated tax provision or benefit, determined generally on a separate company basis, but may, where applicable, recognize the tax benefits of net operating losses or capital losses utilizable by the consolidated group. Intercompany tax balances are settled quarterly on an estimated basis with a final settlement occurring within 30 days of the filing of the consolidated return. The tax allocation agreements are not applied to subsidiaries that are disregarded under federal tax law.

Statements of Cash Flows: Noncash activities are excluded from the Statutory - Basis Statements of Cash Flows. These noncash activities for the years ended December 31 include the following (in millions):

	2019			2018	2017	
Exchange/transfer/conversion/distribution of invested assets	\$	3,493	\$	3,403	\$	5,003
Annuity dividend additions	\$	1,520	\$	1,761	\$	1,503
Capitalized interest	\$	393	\$	397	\$	351
Interest credited on deposit-type contracts	\$	30	\$	28	\$	28

Application of New Accounting Pronouncements:

Principle Based Reserves

In June 2016, the NAIC adopted substantive revisions to Statements of Statutory Accounting Principles ("SSAP") No. 51R, Life Contracts ("SSAP 51R") to facilitate the implementation of principles-based reserving ("PBR"), effective January 1, 2020. The NYDFS has adopted these revisions. TIAA has been granted an exemption from PBR by the NYDFS, for life insurance policies issued in 2020. Under PBR, for new life insurance policies issued after implementation, TIAA will be required to hold the higher of (a) the reserves for life using prescribed factors or (b) the PBR reserve which considers a wide range of future economic conditions, computed using justified company experience factors, such as mortality, policyholder behavior and expenses. Currently TIAA uses formulas and assumptions to determine reserves as prescribed by New York laws and regulations. The Company does not anticipate a material impact on surplus as a result of this adoption.

Goodwill

In December 2019, the NAIC adopted revisions to SSAP No. 68, Business Combinations and Goodwill ("SSAP 68"), which clarifies that goodwill resulting from the acquisition of a SCA entity by the insurance reporting entity is subject to the 10% admittance limit based on the insurer's capital and surplus. The adoption of this guidance did not have a material impact on surplus.

Note 3 - Long-Term Bonds, Preferred Stocks, and Unaffiliated Common Stocks

The book/adjusted carrying value, estimated fair value, excess of fair value over book/adjusted carrying value and excess of book/adjusted carrying value over fair value of long-term bonds at December 31, is shown below (in millions):

	2019										
				Exce	ss of						
		Book/ Adjusted Carrying Value	Book	/alue Over //Adjusted /ing Value	Ca	ok/Adjusted rrying Value Over Fair Value	_	stimated air Value			
Bonds:											
U.S. governments	\$	30,259	\$	4,092	\$	(10)	\$	34,341			
All other governments		4,912		530		(11)		5,431			
States, territories and possessions		730		112		_		842			
Political subdivisions of states, territories, and possessions		641		64		(1)		704			
Special revenue and special assessment, non-guaranteed agencies and government		19,424		1,702		(5)		21,121			
Credit tenant loans		10,482		1,065		(7)		11,540			
Industrial and miscellaneous		116,207		10,190		(155)		126,242			
Hybrids		385		87		(5)		467			
Parent, subsidiaries and affiliates		696		_		(1)		695			
Bank loans		5,282		53		(84)		5,251			
Total	\$	189,018	\$	17,895	\$	(279)	\$	206,634			

	2018										
	-			Exce							
		Book/ Adjusted Carrying Value	Book	/alue Over :/Adjusted /ing Value	Car	ok/Adjusted rying Value Over fair Value		stimated air Value			
Bonds:			•								
U.S. governments	\$	31,179	\$	2,224	\$	(147)	\$	33,256			
All other governments		5,342		232		(111)		5,463			
States, territories and possessions		654		51		(6)		699			
Political subdivisions of states, territories, and possessions		1,054		49		(9)		1,094			
Special revenue and special assessment, non-guaranteed agencies and government		18,478		765		(133)		19,110			
Credit tenant loans		9,922		351		(217)		10,056			
Industrial and miscellaneous		114,059		3,428		(2,907)		114,580			
Hybrids		306		35		(9)		332			
Parent, subsidiaries and affiliates		757		_		(29)		728			
Bank loans		5,574		27		(217)		5,384			
Total	\$	187,325	\$	7,162	\$	(3,785)	\$	190,702			

Impairment Review Process: All securities are subjected to the Company's process for identifying OTTI. The Company writes down securities it deems to have an OTTI in value during the period the securities are deemed to be impaired, based on management's case-by-case evaluation of the decline in value and prospects for recovery. Management considers a wide range of factors in the impairment evaluation process, including, but not limited to, the following: (a) the length of time the fair value has been below amortized cost; (b) the financial condition and near-term prospects of the issuer; (c) whether the debtor is current on contractually obligated interest and principal payments; (d) the intent and ability of the Company to retain the investment for a period of time sufficient to allow for any anticipated recovery in fair value or repayment; (e) information obtained from regulators and ratings agencies; (f) the potential for impairments in an entire industry sector or sub-sector; (g) the potential for impairments in certain economically-depressed geographic locations and (h) the potential for impairment based on an estimated discounted cash flow analysis for structured and loan-backed securities. Where impairment is considered to be other-than-temporary, the Company recognizes a realized loss and adjusts the cost basis of the security accordingly. The Company does not change the revised cost basis for subsequent recoveries in value.

Unrealized Losses on Bonds, Preferred Stocks and Unaffiliated Common Stocks: The gross unrealized losses and estimated fair values for securities by the length of time that individual securities are in a continuous unrealized loss position are shown in the table below (in millions):

		Less	than t	welve mo	nths	Twelve months or more						
	Amortized Cost		Gross Unrealized Loss		Estimated Fair Value		Amortized Cost		Gross Unrealized Loss		Estimated Fair Value	
<u>December 31, 2019</u>												
Loan-backed and structured bonds	\$	1,427	\$	(17)	\$	1,410	\$	1,168	\$	(74)	\$	1,094
All other bonds		3,065		(66)		2,998		3,964		(179)		3,785
Total bonds	\$	4,492	\$	(83)	\$	4,408	\$	5,132	\$	(253)	\$	4,879
Unaffiliated common stocks		69		(9)		60		5		(2)		3
Preferred stocks		30		(2)		28		_		_		_
Total bonds and stocks	\$	4,591	\$	(94)	\$	4,496	\$	5,137	\$	(255)	\$	4,882

		Less	thar	n twelve mo	onths	Twelve months or more						
	Amortized Cost			Gross Unrealized Loss		Estimated Fair Value		nortized Cost	Gross Unrealized Loss		Estimated Fair Value	
December 31, 2018												
Loan-backed and structured bonds	\$	11,922	\$	(276)	\$	11,646	\$	9,721	\$	(423)	\$	9,298
All other bonds		54,512		(2,057)		52,455		13,065		(1,064)		12,001
Total bonds	\$	66,434	\$	(2,333)	\$	64,101	\$	22,786	\$	(1,487)	\$	21,299
Unaffiliated common stocks		349		(40)		309		42		(3)		39
Preferred stocks		9		(1)		8		_				_
Total bonds and stocks	\$	66,792	\$	(2,374)	\$	64,418	\$	22,828	\$	(1,490)	\$	21,338

Based upon the Company's current evaluation of these securities in accordance with its impairment policy, the Company has concluded that these securities are not other-than-temporarily impaired. Additionally, the Company currently intends and has the ability to hold the securities with unrealized losses for a period of time sufficient for them to recover.

Scheduled Maturities of Bonds: The carrying value and estimated fair value of bonds, categorized by contractual maturity, are shown below. Bonds not due at a single maturity date have been included in the following table based on the year of final maturity. Actual maturities may differ from contractual maturities because borrowers may prepay obligations with or without call or prepayment penalties. Mortgage-backed, asset-backed, and bond exchange traded fund securities are shown separately in the table below, as they are not due at a single maturity date (in millions):

	Decembe	r 31, 201	19	December 31, 2018					
	k/ Adjusted ying Value		nated Fair Value		/ Adjusted ving Value	Estimated Fair Value			
Due in one year or less	\$ 3,254	\$	3,287	\$	2,575	\$	2,600		
Due after one year through five years	29,150		30,359		27,520		27,601		
Due after five years through ten years	34,615		37,110		37,358		36,622		
Due after ten years	 62,186		71,614		60,826		63,202		
Subtotal	 129,205		142,370		128,279		130,025		
Residential mortgage-backed securities	28,193		30,610		29,468		30,926		
Commercial mortgage-backed securities	10,320		10,722		10,407		10,285		
Asset-backed securities	20,251		21,883		18,541		18,836		
Exchange-traded funds	1,049		1,049		630		630		
Subtotal	 59,813		64,264		59,046		60,677		
Total	\$ 189,018	\$	206,634	\$	187,325	\$	190,702		

Bond Diversification: The following table presents the diversification of the carrying values of long-term bond investments at December 31. Loan-backed and structured securities issued by the U.S. government are included in residential mortgage-backed securities and asset-backed securities.

	2019	2018
Residential mortgage-backed securities	14.9%	15.7%
Asset-backed securities	10.7%	9.9%
Manufacturing	9.7%	11.1%
Public utilities	9.7%	10.2%
Finance and financial services	8.1%	7.0%
U.S. governments	7.9%	8.1%
Revenue and special obligations	7.2%	6.4%
Services	7.0%	7.9%
Other	7.0%	5.3%
Commercial mortgage-backed securities	5.5%	5.6%
Real estate investment trusts	3.9%	3.4%
Oil and gas	3.6%	4.0%
All other governments	2.6%	2.8%
Communications	2.2%	2.6%
Total	100.0%	100.0%

The following table presents the carrying value of the long-term bond portfolio by investment grade as of December 31, (in millions):

		2018				
NAIC 1 and 2	\$	173,232	91.6%	\$	168,570	90.0%
NAIC 3 through 6		15,786	8.4		18,755	10.0
Total	\$	189,018	100.0%	\$	187,325	100.0%

Loan-backed and Structured Securities: The near-term prepayment assumptions for loan-backed and structured securities are based on historical averages drawing from performance experience for a particular transaction and may vary by security type. The long-term assumptions are adjusted based on expected performance.

For the years ended December 31, 2019 and 2018, the Company recognized OTTI on loan-backed and structured securities of \$14 million and \$26 million, respectively.

Other Disclosures: The following table represents the carrying amount of bonds and stocks denominated in a foreign currency as of December 31, (in millions):

	2019	 2018
Carrying amount of bonds and stocks denominated in foreign currency	\$ 4,386	\$ 3,361
Carrying amount of bonds and stocks denominated in foreign currency which are collateralized by real estate	\$ 861	\$ 757

Note 4 - Mortgage Loans

The Company originates mortgage loans that are principally collateralized by commercial real estate. The composition of the mortgage loan portfolio as of December 31, is as follows (in millions):

Loan Type	2019	2018			
Commercial loans	\$ 29,377	\$	26,274		
Mezzanine loans	2,074		2,568		
Residential loans	990		1,117		
Total	\$ 32,441	\$	29,959		

The maximum and minimum lending rates for mortgage loans originated or purchased during 2019 and 2018 are as follows:

	201	19	2018				
Loan Type	Maximum	Minimum	Maximum	Minimum			
Commercial loans	4.97%	1.70%	5.75%	2.83%			
Mezzanine loans	9.50%	4.99%	6.71%	5.38%			

The maximum percentage of any one loan to the value ("LTV") of the property at the time of the loan, exclusive of insured, guaranteed or purchase money mortgages, originated or purchased during 2019 and 2018 are as follows:

	Maximur	Maximum LTV							
Loan Type	2019	2018							
Commercial loans	69.4%	69.6%							
Mezzanine loans	78.1%	73.7%							

There were no residential mortgage loans originated or purchased during 2019 and 2018.

Impairment Review Process: The Company monitors the effects of current and expected market conditions and other factors on the collectability of mortgage loans to identify and quantify any impairment in value. Impairments are classified as either temporary, for which a recovery is anticipated, or other-than-temporary. Mortgage loans held to maturity with other-than-temporarily impaired values at December 31, 2019 and 2018 have been written down to net realizable values based upon independent appraisals of the collateral. For impaired mortgage loans where the impairments are deemed to be temporary, an allowance for credit losses is established.

Credit Quality

For commercial mortgage loans, the primary credit quality indicators are the loan-to-value ratio, debt service coverage ratio and delinquency. Loan-to-value-ratios compare the unpaid principal balance of the loan to the estimated fair value of the underlying collateral. Generally, the higher the loan-to-value ratio, the higher the risk of experiencing a credit loss. Debt service coverage compares a property's net operating income to amounts needed to service the principal and interest due under the loan. Generally, the lower the debt service coverage ratio, the higher the risk of experiencing a credit loss. The debt service coverage ratio and the loan-to-value ratio, as well as the values utilized in calculating these ratios, are updated quarterly, with a portion of the loan portfolio updated annually. Delinquency is defined as a mortgage loan which is past due. Commercial mortgage loans more than 30 days past due are considered delinquent.

For residential mortgage loans, the Company's primary credit quality indicator is performance versus non-performance. The Company generally defines nonperforming residential mortgage loans as those that are 90 or more days past due and/or on non-accrual status. Generally, nonperforming residential loans have a higher risk of experiencing a credit loss.

The credit quality of the recorded investment, which represents carrying value plus accrued interest, in commercial mortgage loans at December 31, are as follows (in millions):

	Recorded Investment - Commercial											
	 Loan-to-value Ratios											
2019	 > 70%	< 70%		Total		% of Total						
Debt service coverage ratios:												
Greater than 1.20x	\$ 3,459	\$	26,388	\$	29,847	94.6%						
Less than 1.20x	624		1,013		1,637	5.2%						
Construction	_		79		79	0.2%						
Total	\$ 4,083	\$	27,480	\$	31,563	100.0%						
	 Recorded Investment - Commercial Loan-to-value Ratios											
2018	 > 70%			alue Ra	Total	% of Total						
Debt service coverage ratios:			< 70%									
Greater than 1.20x	\$ 3,252	\$	23,928	\$	27,180	93.9%						
Less than 1.20x	530		1,180		1,710	5.9%						
Construction	31		21		52	0.2%						
Total	\$ 3,813	\$	25,129	\$	28,942	100.0%						

Mortgage Loan Age Analysis: The following table sets forth an age analysis of mortgage loans and identification of mortgage loans in which the Company is a participant or co-lender in a mortgage loan agreement as of December 31, (in millions):

				Resi	identia	dential		Commercial						
2019	F	Farm		Insured		All Other		Insured		All Other		- Mezzanine		Total
Recorded investment														
Current	\$	_	\$	_	\$	992	\$	_	\$	29,478	\$	2,084	\$	32,554
30-59 days past due	\$	_	\$	_	\$	2	\$	_	\$	_	\$	_	\$	2
60-89 days past due	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_
90-179 days past due	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_
Participant or co-lender in a mortgage loan agreement														
Recorded investment	\$	_	\$	_	\$	_	\$	_	\$	6,071	\$	2,084	\$	8,155

			Residential				Commercial						
2018	Farm		Insured		All Other		Insured		All Other		- Mezzanine		Total
Recorded investment													
Current	\$	_	\$	_	\$	1,116	\$	_	\$	26,363	\$	2,579	\$ 30,058
30-59 days past due	\$	_	\$	_	\$	3	\$	_	\$	_	\$	_	\$ 3
60-89 days past due	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$ _
90-179 days past due	\$	_	\$	_	\$	1	\$	_	\$	_	\$	_	\$ 1
Participant or co-lender in a mortgage loan agreement													
Recorded investment	\$	_	\$	_	\$	_	\$	_	\$	5,499	\$	2,579	\$ 8,078

Mortgage Loan Diversification: The following tables set forth the mortgage loan portfolio by property type and geographic distribution as of December 31,

	2019	2018
Mortgage Loans by Property Type (Commercial & Residential):	% of Total	% of Total
Office buildings	30.9%	32.0%
Shopping centers	24.0	26.3
Apartments	21.1	18.6
Industrial buildings	11.1	11.1
Other - commercial	9.8	8.3
Residential	3.1	3.7
Total	100.0%	100.0%

	201	19	2018			
Mortgage Loans by Geographic Distribution:	% of '	% of Total				
	Commercial	Residential	Commercial	Residential		
South Atlantic	18.9%	15.1%	22.5%	15.8%		
Pacific	19.2	45.3	18.2	44.6		
South Central	12.8	6.8	14.1	6.7		
Middle Atlantic	17.3	15.4	15.8	15.0		
North Central	10.4	2.7	9.8	3.0		
New England	7.0	5.8	7.5	5.6		
Other	14.4	8.9	12.1	9.3		
Total	100.0%	100.0%	100.0%	100.0%		

Regional classification is based on American Council of Life Insurers regional chart. See below for details of regions.

South Atlantic states are DE, DC, FL, GA, MD, NC, SC, VA and WV

Pacific states are AK, CA, HI, OR and WA

South Central states are AL, AR, KY, LA, MS, OK, TN and TX

Middle Atlantic states are PA, NJ and NY

North Central states are IA, IL, IN, KS, MI, MN, MO, NE, ND, OH, SD and WI

New England states are CT, MA, ME, NH, RI and VT

Other comprises investments in Mountain states (AZ, CO, ID, MT, NV, NM, UT, and WY), Australia, Canada and United Kingdom.

Scheduled Mortgage Loan Maturities: At December 31, contractual maturities for mortgage loans are as follows (in millions):

	2	2018		
	Carry	ing Value	Carry	ing Value
Due in one year or less	\$	635	\$	621
Due after one year through five years		5,569		6,405
Due after five years through ten years		18,163		17,299
Due after ten years		8,074		5,634
Total	\$	32,441	\$	29,959

Actual maturities may differ from contractual maturities because borrowers may have the right to prepay mortgages, although prepayment premiums may be applicable.

With respect to impaired loans, the Company accrues interest income to the extent it is deemed collectible. Cash received on impaired mortgage loans that are performing according to their contractual terms is applied in accordance with those terms. For mortgage loans in the process of foreclosure, cash received is initially held in suspense and

applied as a return of principal at the time that the foreclosure process is completed, or the mortgage is otherwise disposed.

There were no amounts due from related parties that are collateralized by real estate owned by the Company's investment subsidiaries and affiliates for the years ended December 31, 2019 or 2018.

Note 5 - Real Estate

At December 31, 2019 and 2018, the Company's directly owned real estate investments, were carried net of third party mortgage encumbrances. There were \$625 million of third party mortgage encumbrances as of December 31, 2019, and \$44 million for December 31, 2018.

The directly owned real estate portfolio is diversified by property type and geographic region based on carrying value at December 31, as follows:

	2019	2018
Directly Owned Real Estate by Property Type:	% of Total	% of Total
Industrial buildings	65.0%	36.4%
Office buildings	15.8	28.9
Apartments	12.5	21.8
Retail	3.6	7.7
Mixed-use projects	2.2	3.9
Land under development	0.9	1.3
Total	100.0%	100.0%

	2019	2018
Directly Owned Real Estate by Geographic Region:	% of Total	% of Total
Pacific	37.3%	61.9%
South Atlantic	23.3	25.5
Mountain	14.4	_
South Central	10.4	3.8
North Central	7.8	1.7
Middle Atlantic	6.8	7.1
Total	100.0%	100.0%

Note 6 - Subsidiary, controlled and affiliated entities

The Company holds interests in SCA entities which are reported as common stock or other long-term investments. The carrying value of investments in SCA entities at December 31, are shown below (in millions):

2019		2018
\$ 4,900	\$	5,008
 24,088		23,348
\$ 28,988	\$	28,356
	\$ 4,900 24,088	\$ 4,900 \$ 24,088

As of December 31, 2019 and 2018, no investment in a SCA entity exceeded 10% of the Company's admitted assets, and the Company does not have any investment in foreign insurance subsidiaries.

The following tables provide information on the Company's significant investments in non-insurance SCA entities reported as common stock, as well as information received from the NAIC in response to the filing of the common stock investments as of December 31 (in millions):

		2019									
SCA Entities	Percentage of Owners!		Gross Amount	Admitted An	nount	Nonadmitted Amount					
TIAA FSB Holdings, Inc.	100%		\$3,605	\$3,605 \$3,605		\$—					
			:	2019							
SCA Entity	Type of NAIC Filing	Date of Filin		NAIC Response Received Y/N		IC Disallowed Entities Valuation Method, Ibmission Required Y/N					
TIAA FSB Holdings, Inc.	Sub-2	3/11/2019	\$3,555	Y		N					
			:	2018							
SCA Entities	Percentage of Ownersh		Gross Amount	Admitted An	Nonadmitted Amount						
TIAA FSB Holdings, Inc.	100%		\$3,555	\$3,555		\$—					
			;	2018							
SCA Entity	Type of NAIC Filing	Date of Filin to the NAIC		NAIC Response Received Y/N		IC Disallowed Entities Valuation Method, Ibmission Required Y/N					
TIAA FSB Holdings, Inc.	Sub-2	5/22/2018	\$3,331	Y		N					

The Company holds an interest in TIAA-CREF Life Insurance Company ("TIAA Life"), an insurance SCA entity, for which the audited statutory equity reflects NYDFS departures from NAIC SAP as noted below.

The deferred premium asset limitation results from the NYDFS Circular Letter No. 11 (2010), which prescribed the calculation and clarified the accounting for deferred premium assets when reinsurance is involved.

The Stable Value Separate Account ("SVSA") products are accounted for at book value in accordance with New York Insurance Law ("NYIL") Section 1414. The separate account liabilities for the benefits guaranteed under the contracts are carried at book value in accordance with NYIL section 4217, NYDFS Regulation No. 151.

The Department requires in Regulation No. 147 (11NYCRR 98) Valuation of Life Insurance Reserves Section 98.4 for any policy which guarantees renewal, or conversion to another policy, without evidence of insurability, additional reserves shall be held that account for excess mortality due to anti-selection with appropriate margins to cover expenses and risk of moderately adverse deviations in experience.

The following table provides the monetary effect on net income and surplus as a result of using NYDFS prescribed accounting practices that differed from NAIC SAP, the amount of the investment in the insurance SCA per audited statutory equity and amount of the investment if the insurance SCA had completed statutory financial statements in accordance with the Accounting Practices and Procedures ("AP&P") Manual (in millions):

	2019									
		Monetary Effect on NAIC SAP					Amount of Investment			
SCA Entity		Net Income Increase (Decrease)		Surplus Ir (Decre			Per Audited Statutory Equity	Had (Statuto	surance SCA Completed ory Financial tements*	
TIAA-CREF Life Insurance Company	\$		1	\$	6	\$	514	\$	520	

^{*} Per AP&P Manual (without permitted or prescribed practices)

	_	2016									
		Monetary Effect on NAIC SAP					vestment				
SCA Entity		Net Income Increase (Decrease)			Increase rease)	-	Per Audited Statutory Equity	he Insurance SCA Had Completed atutory Financial Statements*			
TIAA-CREF Life Insurance Company	\$		1	\$	1	\$	515	\$	516		

^{*} Per AP&P Manual (without permitted or prescribed practices)

During 2019 and 2018, had TIAA Life not departed from NAIC SAP a regulatory event would not have been triggered due to risk based capital.

The Company held bonds of affiliates at December 31, 2019 and 2018 of \$696 million and \$757 million, respectively.

As of December 31, 2019 and 2018, the net amount due to SCA entities was \$566 million and \$457 million, respectively. The net amounts are generally settled on a daily or monthly basis. These balances are reported in "Other assets" and "Other liabilities." The Company has a subsidiary deposit program which allows certain subsidiaries the ability to deposit excess cash with the Company and earn daily interest. The deposits from this program are included in the net amount due to SCA entities and were \$798 million and \$702 million as of December 31, 2019 and 2018, respectively.

There are no guarantees or undertakings, written or otherwise, for the benefit of an affiliate or a related party that resulted in a material contingent exposure of the reporting entity's or any related party's assets or liabilities.

The Company holds investments in downstream non-insurance holding companies, which are valued by the Company utilizing the look-through approach as defined in SSAP 97, *Investments in Subsidiary, Controlled and Affiliated Entities*. The financial statements for the downstream non-insurance holding companies are not audited and the Company has limited the value of its investment in these non-insurance holding companies. All liabilities, commitments, contingencies, guarantees or obligations of these subsidiaries, which are required to be recorded as liabilities, commitments, contingencies, guarantees or obligations under applicable accounting guidance, are reflected in the Company's determination of the carrying value of the investment in these subsidiaries, if not already recorded in the subsidiaries' financial statements. The Company's carrying value in these downstream non-insurance holding companies is \$7,039 million and \$6,741 million as of December 31, 2019 and 2018, respectively. Significant holdings as of December 31, are as follows (in millions):

	20	19		2018
Subsidiary	Carryin	ing Value Carry		rying Value
TIAA Global Ag Holdco LLC	\$	953	\$	938
TIAA Super Regional Mall Member Sub LLC		673		829
TIAA Infrastructure Investments, LLC		614		557
T-C MV Member LLC		420		453
Occator Agricultural Properties, LLC		417		470
T-C Europe, LP		411		416
T-C Lux Fund Holdings LLC		327		363
Actoil Colorado, LLC		296		137
730 Power Development, LLC		292		316
TGA APAC Fund Holdings, LLC		249		119
TIAA-Stonepeak Investments I, LLC		235		236
NGFF Holdco, LLC		232		_
TGA MKP Member LLC		202		157
T-C Waterford Blue Lagoon LLC		196		195
TIAA Wind Investments LLC		184		179
TIAA GTR Holdco LLC		171		168
Broadleaf Timberland Investments, LLC		101		102
730 Data Centers, LLC		92		108
Infra Alpha LLC		49		181
Other		925		817
Total	\$	7,039	\$	6,741

Note 7 - Other Long-Term Investments

The components of the Company's carrying value in other long-term investments are (in millions):

	2019	 2018
Affiliated other invested assets	\$ 24,088	\$ 23,348
Unaffiliated other invested assets	7,344	6,968
Receivables for securities and derivative collateral	 168	 97
Total other long-term investments	\$ 31,600	\$ 30,413

As of December 31, 2019 and 2018, affiliated other invested assets consist primarily of investments through downstream legal entities in the following (in millions):

	2019			2018		
Real estate	\$	7,084	\$	6,523		
Operating subsidiaries and affiliates		5,357		5,370		
Investment subsidiaries		5,344		5,325		
Agriculture and timber		4,346		4,228		
Energy and infrastructure		1,957		1,902		
Total affiliated other invested assets	\$	24,088	\$	23,348		

Of the \$5,357 million and \$5,370 million of operating subsidiaries and affiliates as of December 31, 2019 and 2018, \$5,139 million and \$5,203 million were attributed to Nuveen, LLC, TIAA's largest subsidiary, respectively.

As of December 31, 2019 and 2018, unaffiliated other invested assets consist primarily of joint ventures.

The following table presents the OTTI recorded for the years ended December 31, (in millions) for other long-term investments for which the carrying value is not expected to be recovered:

	2019	 2018	 2017
\$	182	\$ 661	\$ 454

The following table presents the carrying value for other long-term investments denominated in foreign currency for the years ended December 31, (in millions):

	2019	2018
Other long-term investments denominated in foreign currency	\$ 1,186	\$ 1,277

Note 8 - Investments Commitments

The outstanding obligation for future investments at December 31, 2019, is shown below by asset category (in millions):

	2020			In later years	Tota	I Commitments
Bonds	\$	1,571	\$	210	\$	1,781
Stocks		100		38		138
Mortgage loans		357		_		357
Real estate		38		167		205
Other long-term investments		1,696		4,229		5,925
Total	\$	3,762	\$	4,644	\$	8,406

The funding of bond commitments is contingent upon the continued favorable financial performance of the potential borrowers, funding of stock commitments is contingent upon their continued favorable financial performance and the funding of real estate and commercial mortgage commitments is generally contingent upon the underlying properties meeting specified requirements, including construction, leasing and occupancy. The funding of residential mortgage loan commitments is contingent upon the loan meeting specified guidelines including property appraisal reviews and confirmation of borrower credit. For other long—term investments, primarily fund investments, there are scheduled capital calls that extend into future years.

Note 9 - Investment Income and Capital Gains and Losses

Net Investment Income: The components of net investment income for the years ended December 31, are as follows (in millions):

	2019	2018	2017
Bonds	\$ 8,748	\$ 8,738	\$ 8,709
Stocks	159	79	43
Mortgage loans	1,407	1,268	1,055
Real estate	276	238	237
Derivatives	190	160	109
Other long-term investments	2,261	2,712	2,242
Cash, cash equivalents and short-term investments	 9	8	 9
Total gross investment income	13,050	13,203	12,404
Less investment expenses	(993)	(912)	(723)
Net investment income before amortization of IMR	 12,057	12,291	11,681
Plus amortization of IMR	 267	259	 194
Net investment income	\$ 12,324	\$ 12,550	\$ 11,875

Realized Capital Gains and Losses: The net realized capital gains (losses) on sales, redemptions and write-downs due to OTTI for the years ended December 31, are as follows (in millions):

	 2019	2018	 2017
Bonds	\$ 34	\$ 129	\$ 632
Stocks	(185)	102	(116)
Mortgage loans	_	(65)	(8)
Real estate	112	22	67
Derivatives	132	58	(131)
Other long-term investments	(207)	(649)	(470)
Cash, cash equivalents and short-term investments	 	 18	 51
Total before capital gains taxes and transfers to IMR	 (114)	(385)	25
Transfers to IMR	 (208)	(272)	(623)
Net realized capital losses less capital gains taxes, after transfers to IMR	\$ (322)	\$ (657)	\$ (598)

Write-downs of investments resulting from OTTI, included in the preceding table, are as follows for the years ended December 31, (in millions):

	2	019	2018	2017	
Other-than-temporary impairments:					
Bonds	\$	212	\$ 126	\$	66
Stocks		236	72		311
Mortgage Loans		_	55		_
Other long-term investments		182	661		454
Total	\$	630	\$ 914	\$	831

Information related to the sales of long term bonds are as follows for the years ended December 31, (in millions):

		2018	2017		
Proceeds from sales	\$	6,757	\$ 6,831	\$	13,664
Gross gains on sales	\$	250	\$ 307	\$	745
Gross losses on sales	\$	75	\$ 79	\$	122

The Company performs periodic reviews of its portfolio to identify investments which may have deteriorated in credit quality to determine if any are candidates for sale in order to maintain a quality portfolio of investments. Investments which are deemed candidates for sale are continually monitored until sold and carried at the lower of amortized cost or fair value. In accordance with the Company's valuation and impairment process, the investment will be monitored quarterly for further declines in fair value at which point an OTTI will be recorded until actual disposal of the investment.

Note 10 - Disclosures about Fair Value of Financial Instruments

Fair Value of Financial Instruments

Included in the Company's financial statements are certain financial instruments carried at fair value. Other financial instruments are periodically measured at fair value, such as when impaired, or for certain bonds and preferred stocks when carried at the lower of cost or fair value.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Fair values of financial instruments are based on quoted market prices when available. When market prices are not available, fair values are primarily provided by a third party-pricing service for identical or comparable assets, or through the use of valuation methodologies using observable market inputs. These fair values are generally estimated using a discounted cash flow analysis, incorporating current market inputs for similar financial instruments with comparable terms and credit quality. In instances where there is little or no market activity for the same or similar instruments, the Company estimates fair value using methods, models and assumptions that management believes market participants would use to determine a current transaction price in a hypothetical market. These valuation techniques involve management estimation and judgment for many factors including market bid/ask spreads, and such estimations may become significant with increasingly complex instruments or pricing models.

The Company's financial assets and liabilities are classified, for disclosure purposes, based on a hierarchy defined by SSAP No. 100, Fair Value Measurements. The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The hierarchy gives the highest ranking to fair values determined using unadjusted quoted prices in active markets for identical assets and liabilities (Level 1) and the lowest ranking to fair values determined using methodologies and models with unobservable inputs (Level 3). An asset's or a liability's classification is based on the lowest level input that is significant to its measurement. For example, a Level 3 fair value measurement may include inputs that are both observable (Levels 1 and Level 2) and unobservable (Level 3). The levels of the fair value hierarchy are as follows:

Level 1 – Inputs are unadjusted quoted prices in active markets for identical assets and liabilities that the Company has the ability to access at the measurement date.

Level 2 – Other than quoted prices within Level 1 inputs are observable for the asset or liability, either directly or indirectly.

Level 2 inputs include:

- Quoted prices for similar assets or liabilities in active markets,
- Quoted prices for identical or similar assets or liabilities in markets that are not active,
- Inputs other than guoted prices that are observable for the asset or liability,
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 – Inputs are unobservable inputs for the asset or liability supported by little or no market activity. Unobservable inputs reflect the Company's own assumptions about the assumptions that market participants would use in pricing the asset or liability. The Company's data used to develop unobservable inputs is adjusted if information is reasonably available without undue cost and effort that indicates that market participants would use different assumptions.

Net Asset Value ("NAV") practical expedient - TIAA has elected the NAV practical expedient for certain investments held by its separate account. These investments are excluded from the valuation hierarchy, as these investments are fair valued using their net asset value as a practical expedient since market quotations or values from independent pricing services are not readily available. The separate account assets that have elected the NAV practical expedient represent investments in limited partnerships and limited liability companies that invest in real estate properties. The fair value, determined by the NAV practical expedient, of these assets was \$312 million and total unfunded commitments was \$337 million at December 31, 2019. For these investments, redemptions are prohibited prior to liquidation.

The following table provides information about the aggregate fair value for all financial instruments and their level within the fair value hierarchy as well as investments valued at their NAV, at December 31, 2019 (in millions):

		regate Value	dmitted Assets	L	evel 1	ı	Level 2	evel 2 Level 3		1	t Asset Value NAV)
Assets:											
Bonds	\$ 2	206,635	\$ 189,018	\$	1,049	\$	198,586	\$	7,000	\$	_
Common stock		757	757		509		_		248		_
Preferred stock		522	415		47		71		404		_
Mortgage loans		33,338	32,441		_		_		33,338		_
Derivatives		931	794		_		401		530		_
Other invested assets		96	76		_		96		_		_
Contract loans		1,803	1,803		_		_		1,803		_
Separate account assets		43,884	43,827		15,246		5,869		22,457		312
Cash, cash equivalents & short term investments		902	902		355		547				
Total	\$ 2	288,868	\$ 270,033	\$	17,206	\$	205,570	\$	65,780	\$	312

	Aggregate Fair Value		Statement Value Level 1		1 Level 2 Level 3		_evel 3	N	et Asset Value (NAV)		
Liabilities:											
Deposit-type contracts	\$ 1,600	\$	1,600	\$	_	\$	_	\$	1,600	\$	_
Separate account liabilities	43,765		43,765		_		_		43,765		_
Derivatives	192		198		_		192		_		_
Total	\$ 45,557	\$	45,563	\$	_	\$	192	\$	45,365	\$	_

The following table provides information about the aggregate fair value for all financial instruments and their level within the fair value hierarchy as well as investments valued at their NAV at December 31, 2018 (in millions):

	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3	Net Asset Value (NAV)
Assets:						
Bonds	\$ 190,702	\$ 187,325	\$ 630	\$ 184,668	\$ 5,404	\$ —
Common stock	891	891	696	_	195	_
Preferred stock	309	245	28	19	262	_
Mortgage loans	29,276	29,959	_	_	29,276	_
Derivatives	931	968	_	518	413	_
Other invested assets	89	76	_	89	_	_
Contract loans	1,890	1,890	_	_	1,890	_
Separate account assets	38,260	38,289	12,298	5,295	20,491	176
Cash, cash equivalents & short term investments	597	598	117	480		
Total	\$ 262,945	\$ 260,241	\$ 13,769	\$ 191,069	\$ 57,931	\$ 176

	Aggregate Fair Value		Statement Value						vel 1	Le	evel 2	Level 3	٧	Asset alue IAV)
Liabilities:														
Deposit-type contracts	\$ 1,105	\$	1,105	\$	_	\$	_	\$ 1,105	\$	_				
Separate account liabilities	38,245		38,245		_		_	38,245		_				
Derivatives	168		164		_		168	_		_				
Total	\$ 39,518	\$	39,514	\$	_	\$	168	\$ 39,350	\$					

The estimated fair values of the financial instruments presented above are determined by the Company using market information available as of December 31, 2019 and 2018. Considerable judgment is required to interpret market data in developing the estimates of fair value for financial instruments for which there are no available market value quotations. The estimates presented are not necessarily indicative of the amounts the Company could realize in a market exchange. The use of different market assumptions and/or estimation methodologies may have a material effect on the estimated fair value amounts.

Level 1 financial instruments

Unadjusted quoted prices for these securities are provided to the Company by independent pricing services. Common stock, preferred stock, and separate account assets in Level 1 primarily include mutual fund investments valued by the respective mutual fund companies, exchange listed equities, and public real estate investment trusts. Bonds included in level 1 represent SVO-identified exchange traded funds that qualify for bond treatment, which are valued using quoted market prices. Cash included in Level 1 represents cash on hand.

Level 2 financial instruments

Bonds included in Level 2 are valued principally by third party pricing services using market observable inputs. Because most bonds do not trade daily, independent pricing services regularly derive fair values using recent trades of securities with similar features. When recent trades are not available, pricing models are used to estimate the fair values of securities by discounting future cash flows at estimated market interest rates. Typical inputs to models used by independent pricing services include but are not limited to benchmark yields, reported trades, broker-dealer quotes, issuer spreads, benchmark securities, bids, offers, reference data, and industry and economic events. Additionally, for loan-backed and structured securities, valuation is based primarily on market inputs including benchmark yields, expected prepayment speeds, loss severity, delinquency rates, weighted average coupon, weighted average maturity

and issuance specific information. Issuance specific information includes collateral type, payment terms of underlying assets, payment priority within the tranche, structure of the security, deal performance and vintage of loans.

Preferred stocks included in Level 2 include those which are traded in an inactive market for which prices for identical securities are not available. Valuations are based principally on observable inputs including quoted prices in markets that are not considered active.

Derivative assets and liabilities classified in Level 2 represent over-the-counter instruments that include, but are not limited to, fair value hedges using foreign currency swaps, foreign currency forwards, commodity forwards, interest rate swaps and credit default swaps. Fair values for these instruments are determined internally using market observable inputs that include, but are not limited to, forward currency rates, interest rates, credit default rates and published observable market indices.

Other invested assets in Level 2 are valued by a third party pricing vendor using primarily observable market inputs. Observable inputs include benchmark yields, reported trades, market dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers and reference data.

Separate account assets in Level 2 consist principally of short-term government agency notes and corporate bonds.

Cash equivalents included in Level 2 are valued principally by third party services using market observable inputs.

Level 3 financial instruments

Valuation techniques for bonds included in Level 3 are generally the same as those described in Level 2 except that the techniques utilize inputs that are not readily observable in the market, including illiquidity premiums and spread adjustments to reflect industry trends or specific credit-related issues. The Company assesses the significance of unobservable inputs for each security and classifies that security in Level 3 as a result of the significance of unobservable inputs.

Estimated fair value for privately traded common equity securities are principally determined using valuation and discounted cash flow models that require a substantial level of judgment. Included in Level 3 common stock is the Company's holdings in the Federal Home Loan Bank of New York ("FHLBNY") stock as described in Note 20 - FHLBNY Membership and Borrowings. As prescribed in the FHLBNY's capital plan, the par value of the capital stock is \$100 and all capital stock is issued, redeemed, repurchased, or transferred at par value. Since there is not an observable market for the FHLBNY's stock, these securities have been classified as Level 3.

Preferred shares are valued using valuation and discounted cash flow models that require a substantial level of judgment.

Mortgage loans are valued using discounted cash flow models that utilize inputs which include loan and market interest rates, credit spreads, the nature and quality of underlying collateral and the remaining term of the loans.

Derivatives assets classified as Level 3 represent structured financial instruments that rely on inputs that are significant to the estimated fair value that are not observable in the market or cannot be corroborated by observable market data. Significant inputs that are unobservable generally include references to inputs outside the observable portion of credit curves or other relevant market measures. These unobservable inputs require significant management judgment or assumptions. Level 3 methodologies are validated through periodic comparison of the Company's fair values to external broker-dealer values.

Contract loans are fully collateralized by the cash surrender value of underlying insurance policies and are valued based on the carrying value of the loan, which is determined to be its fair value, and are classified as Level 3.

Separate account assets classified as Level 3 primarily include directly owned real estate properties, real estate joint ventures and real estate limited partnerships. Directly owned real estate properties are valued on a quarterly basis based on independent third party appraisals. Real estate joint venture interests are valued based on the fair value of the underlying real estate, any related mortgage loans payable and other factors such as ownership percentage,

ownership rights, buy/sell agreements, distribution provisions and capital call obligations. Real estate limited partnership interests are valued based on the most recent NAV of the partnership.

Separate account liabilities are accounted for at fair value, except the TIAA Stable Value Separate Account, which supports book value separate account agreements, in which case the assets are accounted for at amortized cost. Separate account liabilities reflect the contractual obligations of the insurer arising out of the provisions of the insurance contract.

Deposit-type contracts are valued based on the accumulated account value, which is determined to be fair value, and are classified as Level 3.

Assets and Liabilities Measured and Reported at Fair Value

The following table provides information about the aggregate fair value for financial instruments measured and reported at fair value and their level within the fair value hierarchy as well as investments valued at their NAV at December 31, (in millions):

	2019												
	 evel 1	L	evel 2	L	_evel 3	Net Asset Value (NAV)			Total				
Assets at fair value:													
Bonds													
U.S. Government	\$ _	\$	1,393	\$	_	\$	_	\$	1,393				
Industrial and miscellaneous	 1,049		158		49				1,256				
Total bonds	\$ 1,049	\$	1,551	\$	49	\$		\$	2,649				
Common stock													
Industrial and miscellaneous	\$ 509	\$	_	\$	248	\$	_	\$	757				
Total common stocks	\$ 509	\$	_	\$	248	\$	_	\$	757				
Preferred stock	\$ 	\$		\$	28	\$		\$	28				
Total preferred stocks	\$ 	\$		\$	28	\$		\$	28				
Derivatives													
Interest rate contracts	\$ _	\$	12	\$	_	\$	_	\$	12				
Foreign exchange contracts	_		396		_		_		396				
Total derivatives	\$ _	\$	408	\$	_	\$		\$	408				
Separate accounts assets	\$ 15,227	\$	4,158	\$	22,457	\$	312	\$	42,154				
Total assets at fair value	\$ 16,785	\$	6,117	\$	22,782	\$	312	\$	45,996				
Liabilities at fair value:													
Derivatives													
Foreign exchange contracts	\$ _	\$	164	\$	_	\$	_	\$	164				
Credit default swaps	_		3		_		_		3				
Total liabilities at fair value	\$ _	\$	167	\$	_	\$	_	\$	167				

						2018			
	L	evel 1	L	evel 2	L	_evel 3	Net Asset Value (NAV)		Total
Assets at fair value:									
Bonds									
U.S. Government	\$	_	\$	1,174	\$	_	\$	_	\$ 1,174
Industrial and miscellaneous		630		176		100			906
Total bonds	\$	630	\$	1,350	\$	100	\$	_	\$ 2,080
Common stock									
Industrial and miscellaneous	\$	696	\$	_	\$	195	\$	_	\$ 891
Total common stocks	\$	696	\$		\$	195	\$		\$ 891
Preferred stock	\$	_	\$	_	\$	4	\$	_	\$ 4
Total preferred stocks	\$		\$		\$	4	\$	_	\$ 4
Derivatives									
Interest rate contracts	\$	_	\$	4	\$	_	\$	_	\$ 4
Foreign exchange contracts		_		473		_			 473
Total derivatives	\$	_	\$	477	\$	_	\$		\$ 477
Separate accounts assets	\$	12,288	\$	4,089	\$	20,491	\$	176	\$ 37,044
Total assets at fair value	\$	13,614	\$	5,916	\$	20,790	\$	176	\$ 40,496
Liabilities at fair value:									
Derivatives									
Foreign exchange contracts	\$	_	\$	152	\$		\$	_	\$ 152
Credit default swaps		_		3		_			 3
Total liabilities at fair value	\$	_	\$	155	\$		\$		\$ 155

Reconciliation of Level 3 assets and liabilities measured and reported at fair value:

The following is a reconciliation of the beginning and ending balances for assets and liabilities measured and reported at fair value using Level 3 inputs at December 31, 2019 (in millions):

	В	at		Transfers into Level 3		Transfers out of Level 3	gains & (losses) included in Net Income	gains & (losses) included in Surplus	F	Purchases	Issuances	S	ales	Settlements	Ending Balance at 12/31/2019		
Bonds	\$	100	\$	41	а	\$ (45) b	(23)	\$ 7	\$	\$ 16	\$ 2	\$	(46)	\$ (3)	\$ 49		
Common stock		195		_		_	(9)	10		1,652	_	(1,600)	_	248		
Preferred stock		4		12	С	(18) d	_	_		30	_		_	_	28		
Separate account assets		20,491		_		_	155	160		3,024	_	(1,757)	384	22,457		
Total	\$	20,790	\$	53		\$ (63)	\$ 123	\$ 177	\$	\$ 4,722	\$ 2	\$(3,403)	\$ 381	\$ 22,782		

- (a) The Company transferred bonds into Level 3 that were measured and reported at fair value.
- (b) The Company transferred bonds out of Level 3 that were not measured and reported at fair value.
- (c) The Company transferred preferred stocks into Level 3 that were measured and reported at fair value.
- (d) The Company transferred preferred stocks out of Level 3 that were not measured and reported at fair value.

The following is a reconciliation of the beginning and ending balances for assets and liabilities measured and reported at fair value using Level 3 inputs at December 31, 2018 (in millions):

	Ba	eginning lance at /01/2018	Transfers into Level 3		Transfers out of Level 3		Total gains (losses) included in Net Income	Total gains (losses) included in Surplus		Purchases		suances (Sales)	Settlements	Ending Balance at 12/31/2018	
Bonds	\$	65	\$ 75	а	\$ (38)	b	\$ (8)	\$ 7	,	\$ 1	\$	(1)	\$ (1)) \$	100
Common stock		203	_		(9)	С	33	(3))	1,039		(1,068)	_		195
Preferred stock		_	44	d	(40)	е	_	_		_		_	_		4
Separate account assets		20,038	_		(176)	f	55	451		2,214		(1,994)	(97))	20,491
Total	\$	20,306	\$ 119		\$ (263)		\$ 80	\$ 455	,	\$ 3,254	\$	(3,063)	\$ (98)) \$	20,790

- (a) The Company transferred bonds into Level 3 that were measured and reported at fair value.
- (b) The Company transferred bonds out of Level 3 that were not measured and reported at fair value.
- (c) The Company transferred common stocks out of Level 3 due to the availability of observable market data used in the valuation of these securities.
- (d) The Company transferred preferred stocks into Level 3 that were measured and reported at fair value.
- (e) The Company transferred preferred stocks out of Level 3 that were not measured and reported at fair value.
- (f) The Company elected the NAV practical expedient for certain separate account assets that have been transferred out of Level 3.

The Company's policy is to recognize transfers into and out of Level 3 at the actual date of the event or change in circumstances that caused the transfer.

Quantitative Information Regarding Level 3 Fair Value Measurements

The following table provides quantitative information on significant unobservable inputs (Level 3) used in the fair value measurement of assets that are measured and reported at fair value at December 31, 2019 (in millions):

Financial Instrument Fixed maturity securities:		ir Value	Valuation Techniques	Significant Unobservable Inputs	Range of Inputs	Weighted Average
ABS	\$	49	Discounted cash Flow	Discount rate	15.9 % - 17.0%	16.0 %
Equity securities:						
Common stock	\$	248	Market comparable	EBITDA multiple	7.9x - 14.6x	11.7x
			Equity method	Book value multiple	1.0x	1.0x
			Market comparable	Credit analysis/market comparable	\$15.96 -\$1,248.74	\$489.63
Preferred stock	\$	28	Market comparable	EBITDA multiple	9.9x - 11.8x	11.4x
Separate account assets:						
Real estate properties and real estate joint ventures	\$	22,457				
Office properties			Income approach -	Discount rate	5.5% - 8.5%	6.6%
			discounted cash flow	Terminal capitalization rate	4.0% - 7.5%	5.5%
			Income approach - direct capitalization	Overall capitalization rate	3.9% - 7.0%	5.0%
Industrial properties			Income approach -	Discount rate	5.3% - 9.0%	6.7%
			discounted cash flow	Terminal capitalization rate	4.3% - 8.1%	5.5%
			Income approach - direct capitalization	Overall capitalization rate	3.9% - 7.4%	4.9%
Residential properties			Income approach -	Discount rate	5.3% - 7.8.%	6.4%
			discounted cash flow	Terminal capitalization rate	4.3% - 6.8%	5.1%
			Income approach - direct capitalization	Overall capitalization rate	3.8% - 6.0%	4.6%
Retail properties			Income approach -	Discount rate	5.3% - 11.7%	6.6%
			discounted cash flow	Terminal capitalization rate	4.8% - 9.4%	5.4%
			Income approach - direct capitalization	Overall capitalization rate	3.3% - 11.0%	4.9%
Hotel properties			Income approach -	Discount rate	10.0% - 10.0%	10.0%
r transfer			discounted cash flow	Terminal capitalization rate	7.8% - 7.8%	7.8%
			Income approach - direct capitalization	Overall capitalization rate	7.5% - 7.5%	7.5%

Separate account real estate assets include the values of the related mortgage loans payable in the table below.

Financial Instrument	Fa	ir Value	Valuation Techniques	Significant Unobservable Inputs	Range of Inputs	Weighted Average
Mortgage loans payable	\$	(2,615)				
Office and industrial properties				Loan to value ratio	31.6% - 59.5%	46.3%
			Discounted cash flow	Equivalency rate	3.1% - 4.3%	3.4%
				Loan to value ratio	31.6% - 59.5%	46.3%
			Net present value	Weighted average cost of capital risk premium multiple	1.2 - 1.5	1.3
Residential properties				Loan to value ratio	30.2% - 69%	47.8%
			Discounted cash flow	Equivalency rate	3% - 3.6%	3.3%
				Loan to value ratio	30.2% - 69%	47.8%
			Net present value	Weighted average cost of capital risk premium multiple	1.2 - 1.7	1.3
Retail properties				Loan to value ratio	33.3% - 63.3%	41.1%
			Discounted cash flow	Equivalency rate	3.3% - 4%	3.5%
				Loan to value ratio	33.3% - 63.3%	41.1%
			Net present value	Weighted average cost of capital risk premium multiple	1.2 - 1.5	1.3

Separate account real estate assets include the values of the related loan receivable in the table below.

Financial Instrument	Fair	Value	Valuation Techniques	Significant Unobservable Inputs	Range of Inputs	Weighted Average
Loan receivable	\$	1,572				
Office, retail and storage properties			Discounted cash flow	Loan to value ratio	31.7% - 81.5%	72.5%
			Discounted cash now	Equivalency rate	3.2% - 8.4%	6.0%

Additional Qualitative Information on Fair Valuation Process

The Company has various processes and controls in place to ensure that fair value is reasonably estimated. The procedures and framework for fair value methodologies are approved by the TIAA Valuation Committee. The Risk Management Valuation group is responsible for the determination of fair value in accordance with the procedures and framework approved by the TIAA Valuation Committee.

Risk Management Valuation (1) compares price changes between periods to current market conditions, (2) compares trade prices of securities to fair value estimates, (3) compares prices from multiple pricing sources, and (4) performs ongoing vendor due diligence to confirm that independent pricing services use market-based parameters for valuation. Internal and vendor valuation methodologies are reviewed on an ongoing basis and revised as necessary based on changing market conditions to ensure values represent a reasonable exit price.

Markets in which the Company's fixed income securities trade are monitored by surveying the Company's traders. Risk Management Valuation determines if liquidity is active enough to support a Level 2 classification. Use of independent non-binding broker quotations may indicate a lack of liquidity or the general lack of transparency in the process to develop these price estimates, causing them to be considered Level 3.

Level 3 equity investments generally include private equity co-investments along with general and limited partnership interests. Values are derived by the general partners. The partners generally fair value these instruments based on projected net earnings, earnings before interest, taxes depreciation and amortization, discounted cash flow, public or private market transactions, or valuations of comparable companies. When using market comparable, certain adjustments may be made for differences between the reference comparable and the investment, such as liquidity. Investments may also be valued at cost for a period of time after an acquisition, as the best indication of fair value.

With respect to real property investments in TIAA's Real Estate Account, each property is appraised, and each mortgage loan is valued, at least once every calendar quarter. Each property is appraised by an independent, third party appraiser, reviewed by the Company's internal appraisal staff and as applicable, the Real Estate Account's independent fiduciary. Any differences in the conclusions of the Company's internal appraisal staff and the independent appraiser are reviewed by the independent fiduciary, who will make a final determination. The independent fiduciary was appointed by a special subcommittee of the Investment Committee of TIAA Board of Trustees to, among other things, oversee the appraisal process. The independent fiduciary must approve all independent appraisers used by the Real Estate Account.

Mortgage loans payable are valued internally by the Risk Management Valuation group, and reviewed by the Real Estate Account's independent fiduciary, at least quarterly based on market factors, such as market interest rates and spreads for comparable loans, the performance of the underlying collateral (such as the loan-to-value ratio and the cash flow of the underlying collateral), the liquidity for mortgage loans of similar characteristics, the maturity date of the loan, the return demands of the market.

The loans receivable are valued internally by the Risk Management Valuation group, and reviewed by the Real Estate Account's independent fiduciary, at least quarterly based on market factors, such as market interest rates and spreads for comparable loans, the liquidity for loans of similar characteristics, the performance of the underlying collateral (such as the loan-to-value ratio and the cash flow of the underlying collateral) and the credit quality of the counterparty. The Real Estate Account continues to use the revised value after valuation adjustments for the loan receivable to calculate the Account's daily NAV until the next valuation review.

Note 11 - Restricted Assets

The following tables provide information on the amounts and nature of assets pledged to others as collateral or otherwise restricted by the Company as of December 31, (in millions):

										2019	9						
		1	2		3		4	5		6		7	8		9	10	11
Restricted Asset Category	Ge Ac	Total eneral count G/A)	G/A pporting (S/A) activity	R	Total separate Account (S/A) estricted Assets	Su	A Assets pporting A Activity	otal lus 3)	Fi Pi	otal rom rior ear	(D	ncrease / lecrease) minus 6)	Total Non admitted Restricted	Re	Total dmitted estricted minus 8)	Gross (Admitted & Nonadmitted) Restricted to Total Assets	Admitted Restricted to Total Admitted Assets
Collateral held under security lending agreements	\$	363	\$ _	- \$	32	\$	_	\$ 395	\$	636	\$	(241)	\$ —	\$	395	0.12%	0.13%
FHLB capital stock		104	_	-	_		_	104		82		22	_		104	0.03%	0.03%
On deposit with states		17	_	-	_		_	17		17		_	_		17	0.01%	0.01%
Pledged as collateral to FHLB (including assets backing funding agreements)		449	_	-	_		_	449		_		449	_		449	0.14%	0.14%
Pledged as collateral not captured in other categories		35	_	-	_		_	35		26		9	_		35	0.01%	0.01%
Other restricted assets		99	_		25			124		224		(100)	_		124	0.04%	0.04%
Total restricted assets	\$	1,067	\$ _	- \$	57	\$	_	\$ 1,124	\$	985	\$	139	\$ <u> </u>	\$	1,124	0.35%	0.36%

											2018	В						
		1	2		3		4		5		6		7	8		9	10	11
Restricted Asset Category	Ge Ad	otal eneral count G/A)	G/A upporting (S/A) Activity		Total Separate Account (S/A) Restricted Assets	Sı	A Assets upporting A Activity	(1	Total l plus 3)	F	Γotal From Prior Year	(E	Decrease)	Total Non admitted Restricted	F	Total Admitted Restricted 5 minus 8)	Gross (Admitted & Nonadmitted) Restricted to Total Assets	Admitted Restricted to Total Admitted Assets
Collateral held under security lending agreements	\$	562	\$ _	- ;	\$ 74	\$	_	\$	636	\$	732	\$	(96) \$	\$ —	\$	636	0.21%	0.21%
FHLB capital stock		82	_	-	_		_		82		81		1	_		82	0.03%	0.03%
On deposit with states		17	_	-	_		_		17		18		(1)	_		17	0.01%	0.01%
Pledged as collateral not captured in other categories		26	_	-	_		_		26		332		(306)	_		26	0.01%	0.01%
Other restricted assets		70	_	-	154		_		224		42		182	_		224	0.07%	0.07%
Total restricted assets	\$	757	\$ _	- ;	\$ 228	\$	_	\$	985	\$	1,205	\$	(220)	\$ _	\$	985	0.33%	0.33%

The pledged as collateral not captured in other categories represents derivative collateral the Company has pledged and collateral pledged associated with forward loan purchase agreements.

The other restricted assets represents preferred stocks held within the general account for which the transfer of ownership was restricted by contractual requirements and real estate deposits held within separate accounts.

The following tables provide the collateral received and reflected as assets by the Company and the recognized obligation to return collateral assets as of December 31, (in millions):

	2019										
Collateral Assets	Carry	k/Adjusted ying Value BACV)	Fair Value		BACV to Total Assets (Admitted and Nonadmitted)	BACV to Total Admitted Assets					
General Account:											
Cash, cash equivalents and short-term investments	\$	868	\$	868	0.32 %	0.32 %					
Securities lending collateral assets		363		363	0.13%	0.13 %					
Total General Account Collateral Assets	\$	1,231	\$	1,231	0.45 %	0.45 %					
Separate Account:											
Securities lending collateral assets	\$	32	\$	32	0.07 %	0.07 %					
Total Separate Account Collateral Assets	\$	32	\$	32	0.07 %	0.07 %					

	2019	<u> </u>
	Amount	% of Total Liabilities
Recognized Obligation to Return Collateral Asset (General Account)	\$ 1,231	0.53%
Recognized Obligation to Return Collateral Asset (Separate Account)	\$ 32	0.07%

2018

2018

Collateral Assets	Carr	<pre></pre>	Fai	r Value	BACV to Total Assets (Admitted and Nonadmitted)	BACV to Total Admitted Assets					
General Account:					-						
Cash, cash equivalents and short-term investments	\$	756	\$	756	0.28%	0.29%					
Securities lending collateral assets		562		562	0.21%	0.21%					
Total General Account Collateral Assets	\$	1,318	\$	1,318	0.49%	0.50%					
Separate Account:											
Securities lending collateral assets	\$	74	\$	74	0.19%	0.19%					
Total Separate Account Collateral Assets	\$	74	\$	74	0.19%	0.19%					

	Amount	% of Total Liabilities
Recognized Obligation to Return Collateral Assets (General Account)	\$ 1,318	0.58%
Recognized Obligation to Return Collateral Asset (Separate Account)	\$ 74	0.19%

The Company receives primarily cash collateral for derivatives. The Company reinvests the cash collateral or uses the cash for general corporate purposes.

Note 12 - Derivative Financial Instruments

The Company uses derivative instruments for economic hedging and asset replication purposes. The Company does not engage in derivative financial instrument transactions for speculative purposes. The Company does not enter into derivative financial instruments with financing premiums.

Counterparty and Credit Risk: Derivative financial instruments used by the Company may be exchange-traded or contracted in the over-the-counter market ("OTC"). The Company's OTC derivative transactions are cleared and settled through central clearing counterparties ("OTC-cleared") or through bilateral contracts with other counterparties ("OTC-bilateral"). Should an OTC-bilateral counterparty fail to perform its obligations under contractual terms, the Company may be exposed to credit-related losses. The current credit exposure of the Company's derivatives is limited to the net positive fair value of derivatives at the reporting date, after taking into consideration the existence of netting agreements and any collateral received. All of the credit exposure for the Company from OTC-bilateral contracts is with investment grade counterparties. The Company also monitors its counterparty credit quality on an ongoing basis.

The Company currently has International Swaps and Derivatives Association ("ISDA") master swap agreements in place with each derivative counterparty relating to OTC transactions. In addition to the ISDA agreement, Credit Support Annexes ("CSA"), which are bilateral collateral agreements, are put in place with a majority of the Company's derivative OTC-bilateral counterparties. The CSAs allow the Company's mark-to-market exposure to a counterparty to be collateralized by the posting of cash or highly liquid U.S. government securities. The Company also exchanges cash and securities margin for derivatives traded through a central clearinghouse. As of December 31, 2019 and 2018, counterparties pledged \$908 million and \$800 million, respectively, of cash collateral and margin to the Company.

The Company must also post collateral or margin to the extent its net position with a given counterparty or clearinghouse is at a loss relative to the counterparty. As of December 31, 2019 and 2018, the Company pledged the following collateral and margin to its counterparties (in millions):

	 Decem	ber 31	١,
	 2019		2018
Cash collateral and margin	\$ 20	\$	11
Securities collateral and margin	\$ 5	\$	5

The amount of accounting loss the Company will incur if any party to the derivative contract fails completely to perform according to the terms of the contract and the collateral or other security, if any, for the amount due proved to be of no value to the Company is equal to the gross asset value and accrued interest receivable of all derivative contracts which, as of December 31, 2019, is \$876 million.

Certain of the Company's master swap agreements governing its derivative instruments contain provisions that require the Company to maintain a minimum credit rating from two of the major credit rating agencies. If the Company's credit rating falls below the specified minimum, each of the counterparties to agreements with such requirements could terminate all outstanding derivative transactions between such counterparty and the Company. The termination requires immediate payment of amounts expected to approximate the net liability positions of such transactions with such counterparty. The aggregate fair value of all derivative instruments with credit-risk-related contingent features in a liability position on December 31, 2019 and 2018 were \$30 million and \$9 million, respectively, for which the Company posted collateral of \$20 million and \$9 million, respectively, through the normal course of business.

Derivative Types: The Company utilizes the following types of derivative financial instruments and strategies within its portfolio:

Interest Rate Swaps: The Company enters into interest rate swap contracts to economically hedge against the effect of interest rate fluctuations on certain variable interest rate bonds. The Company does not apply hedge accounting for these derivatives instruments.

Foreign Currency Swap Contracts: The Company enters into foreign currency swap contracts to exchange fixed and variable amounts of foreign currency at specified future dates and at specified rates (in U.S. dollars) as a cash flow hedge to manage currency risks on investments denominated in foreign currencies. The Company applies hedge accounting to certain of these derivatives instruments and fair value accounting to the majority of these derivatives instruments.

Foreign Currency Forward Contracts: The Company enters into foreign currency forward contracts to exchange foreign currency at specified future dates and at specified rates (in U.S. dollars) to manage currency risks on investments denominated in foreign currencies. The Company does not apply hedge accounting for these derivatives instruments.

Purchased Credit Default Swap Contracts: The Company purchases credit default swaps to hedge against unexpected credit events on selective investments held in the Company's investment portfolio. The Company pays a periodic fee in exchange for the right to put the underlying investment back to the counterparty at par upon a credit event by the underlying referenced issuer. Credit events are typically defined as bankruptcy, failure to pay, or certain types of restructuring. The Company does not apply hedge accounting for these derivatives instruments.

Written Credit Default Swaps used in Replication Transactions: Credit default swaps are used by the Company in conjunction with long-term bonds as replication synthetic asset transactions ("RSAT"). RSATs are derivative transactions (the derivative component) established concurrently with other investments (the cash component) in order to "replicate" the investment characteristics of another permissible instrument (the reference entity). The Company sells credit default swaps on single name corporate or sovereign credits, credit indices, or credit index tranches and provides credit default protection to the buyer. Events or circumstances that would require the Company to perform under a written credit default swap may include, but are not limited to, bankruptcy, failure to pay, debt moratorium, debt repudiation, debt restructuring, or default. The Company does not apply hedge accounting for these derivatives instruments.

Asset Swaps: The Company enters into asset swap contracts to hedge against inflation risk associated with its U.S. Treasury Inflation Protected Securities (TIPS). The Company also uses asset swap contracts in certain RSATs. For hedges of its TIPS, the Company pays all cash flows received from the TIPS security to the counterparty in exchange for fixed interest rate coupon payments. The Company applies hedge accounting for asset swaps used in hedging transactions, and does not apply hedge accounting for asset swaps used in RSATs.

Total Return Swaps: The Company enters into total return swap contracts in conjunction with long-term bonds as part of its RSAT strategy. The Company does not apply hedge accounting for these derivatives instruments.

Commodity Forward Contracts: The Company enters into forward contracts to sell crude oil at a specified price on a specified future date in order to economically hedge against the effect of fluctuations in crude oil prices on certain equity investments held in its investment portfolio. The Company does not apply hedge accounting for these derivatives instruments.

The table below illustrates the change in net unrealized capital gains and losses and realized capital gains and losses from derivative instruments. Instruments utilizing hedge accounting treatment are shown as qualifying hedge relationships. Instruments that utilize fair value accounting are shown as non-qualifying hedge relationships. Derivatives used in replication strategies are shown as derivatives used for other than hedging purposes (in millions):

	D	December		019	D	ecembe	r 31, 2	018	D	ecembe	r 31, 2017	
	Change in Net Unrealized Capital Gain (Loss)		Net Realized Capital Gain (Loss)		Unro Ca	nge in Net ealized apital Gain .oss)	Rea Ca G	let alized pital ain oss)	Unr C:	ange in Net ealized apital Gain Loss)	Net Realized Capital Gain (Loss)	
Qualifying hedge relationships												
Foreign currency swap contract	\$	(19)	\$	(5)	\$	19	\$	(2)	\$	(21)	\$	6
Total qualifying hedge relationships		(19)		(5)		19		(2)		(21)		6
Non-qualifying hedge relationships												
Commodity forwards		_		_		18		(24)		(18)		(40)
Foreign currency swaps		(17)		22		493		15		(544)		31
Foreign currency forwards		(71)		108		115		47		(161)		(132)
Interest rate contracts		8		_		1		_		(1)		_
Purchased credit default swaps		_		_		4		(1)		5		_
Total non-qualifying hedge relationships	\$	(80)	\$	130	\$	631	\$	37	\$	(719)	\$	(141)
Derivatives used for other than hedging purposes				7				23		_		5
Total derivatives	\$	(99)	\$	132	\$	650	\$	58	\$	(740)	\$	(130)

Events or circumstances that would require the Company to perform under a written credit derivative position may include, but are not limited to, bankruptcy, failure to pay, debt moratorium, debt repudiation, restructuring of debt and acceleration, or default. The maximum potential amount of future payments (undiscounted) the Company could be required to make under the credit derivative is represented by the notional amount of the contract. Should a credit event occur, the amounts owed to a counterparty by the Company may be subject to recovery provisions that include, but are not limited to:

- 1. Notional amount payment by the Company to Counterparty and/or delivery of physical security by Counterparty to the Company.
- 2. Notional amount payment by the Company to Counterparty net of contractual recovery fee.
- 3. Notional amount payment by the Company to Counterparty net of auction determined recovery fee.

The Company will record an other-than-temporary impairment loss on a derivative position if an existing condition or set of circumstances indicates there is a limited ability to recover an unrealized loss. For the year ended December 31, 2019, there were no other-than-temporary impairment losses recorded for derivative positions.

The Company enters into replication transactions whereby credit default swaps have been written by the Company on credit indices, credit index tranches, or single name corporate or sovereign credits. Credit index positions represent replications where credit default swaps have been written by the Company on the Dow Jones North American Investment Grade Series of indexes (DJ.NA.IG). Each index is comprised of 125 liquid investment grade credits domiciled in North America and represents a broad exposure to the investment grade corporate market. Index positions also represent replications where credit default swaps have been written by the Company on the Dow Jones North American High Yield Series of indexes (DJ.NA.HY). Each index is comprised of 100 high yield credits domiciled in North America and represents a broad exposure to the high yield corporate market.

The Company writes contracts on the "Senior" tranche of the Dow Jones North American Investment Grade Index Series 25, 27, 29, 31 and 33 (DJ.NA.IG.25, DJ.NA.IG.27, DJ.NA.IG.29, DJ.NA.IG.31 and DJ.NA.IG.33, respectively), whereby the Company is obligated to perform should the default rates of each index fall between 7%-15%. The Company also writes contracts on the "Super Senior" tranche of the Dow Jones North American High Yield Index Series 27 and 31 (DJ.NA.HY.27 and DJ.NA.HY.31, respectively), whereby the Company is obligated to perform should the default rates of each index fall between 35%-100%. The maximum potential amount of future payments (undiscounted) the Company could be required to make under these positions is represented by the notional amount of the contracts.

Information related to the credit quality of replication positions involving credit default swaps appears below. The values below are listed in order of their NAIC credit designation, with a designation of 1 having the highest credit quality based on the underlying asset referenced by the credit default swap (in millions):

		De	cemb	er 31, 201		December 31, 2018					
RSAT NAIC Designation	Referenced Credit Obligation	CDS otional mount	Esti	DS mated Value	Weighte Averag Years t Maturit	e 0	CDS Notional Amount		CDS Estimated Fair Value	Weighted Average Years to Maturity	
1 Highest	Single name credit default swaps	\$ _	\$	_		_	\$	_	\$ _	_	
Highest quality	Credit default swaps on indices	8,725		530		3		8,797	413	4	
	Subtotal	8,725		530		3		8,797	413	4	
2 Liab	Single name credit default swaps	_		_		_		5	_	3	
High quality	Credit default swaps on indices	_		_		_		_	_	_	
	Subtotal	_		_		_		5	_	3	
3 Medium	Single name credit default swaps	_		_		_		_	_	_	
quality	Credit default swaps on indices	_		_		_		_	_	_	
	Subtotal	_		_		_		_	_	_	
	Total	\$ 8,725	\$	530		_	\$	8,802	\$ 413	_	

The table below illustrates derivative asset and liability positions held by the Company, including notional amounts, carrying values and estimated fair values. Instruments utilizing hedge accounting treatment are shown as qualifying hedge relationships. Hedging instruments that utilize fair value accounting are shown as non-qualifying hedge relationships. Derivatives used in replication strategies are shown as derivatives used for other than hedging purposes.

				Sum	ıma	ry of Deri	vat	ive Pos	itior	าร		
						(in mil	lion	ns)				
	December 31, 2019						De	cem	ber 31,	, 2018		
	N	otional	Ca	arrying /alue	Es	stimated FV	N	otional		rrying 'alue	Esti	imated FV
Qualifying hedge relationships	_						_					
Asset swaps												
Assets	\$	1,210	\$	_	\$	(18)	\$	1,210	\$	_	\$	39
Liabilities		_		_		_		_		_		_
Foreign currency swap contracts												
Assets		274		9		11		124		6		2
Liabilities		882		(32)		(26)		60		(9)		(12)
Total qualifying hedge relationships	\$	2,366	\$	(23)	\$	(33)	\$	1,394	\$	(3)	\$	29
Non-qualifying hedge relationships												
Commodity forwards												
Assets	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_
Liabilities		_		_		_		_		_		_
Interest rate contracts												
Assets		116		12		12		116		4		4
Liabilities		_		_		_		_		_		_
Foreign currency swaps												
Assets		4,550		383		383		4,729		424		424
Liabilities		2,451		(124)		(124)		2,200		(148)		(148)
Foreign currency forwards												
Assets		789		13		13		1,676		48		48
Liabilities		2,293		(40)		(40)		521		(4)		(4)
Purchased credit default swaps												
Assets		_		_		_		3		_		_
Liabilities		146		(3)		(3)		301		(3)		(3)
Total non-qualifying hedge relationships	\$	10,345	\$	241	\$	241	\$	9,546	\$	321	\$	321
Derivatives used for other than hedging purposes												
Written credit default swaps												
Assets	\$	8,725	\$	378	\$	530	\$	8,797	\$	486	\$	413
Liabilities		_		_		_		5		_		_
Asset swaps and total return swaps												
Assets		10		_		_		10		_		_
Liabilities		_		_		_		_		_		_
Total derivatives used for other than hedging	•	Q 72F	•	378	•	530	<u> </u>	8,812	•	486	•	413
purposes	\$	8,735					_					
Total derivatives	\$	21,446	\$	596	\$	738	<u>\$</u>	19,752	\$	804	\$	763

For the year ended December 31, 2019, the average fair value of derivatives used for other than hedging purposes, was \$521 million.

Note 13 - Separate Accounts

The TIAA Separate Account VA-1 ("VA-1") is a segregated investment account established on February 16, 1994 under the insurance laws of the State of New York for the purpose of issuing and funding after-tax variable annuity contracts for employees of non-profit institutions organized in the United States, including governmental institutions. VA-1 is registered with the Securities and Exchange Commission, (the "Commission") effective November 1, 1994 as an open-end, diversified management investment company under the Investment Company Act of 1940. VA-1 consists of a single investment portfolio, the Stock Index Account ("SIA"). The SIA was established on October 3, 1994 and invests in a diversified portfolio of equity securities selected to track the overall market for common stocks publicly traded in the United States.

The TIAA Real Estate Account ("REA" or "VA-2") is a segregated investment account organized on February 22, 1995, under the insurance laws of the State of New York for the purpose of providing an investment option to TIAA's pension customers to direct investments to an investment vehicle that invests primarily in real estate. VA-2 is registered with the Commission under the Securities Act of 1933 effective October 2, 1995. VA-2's target is to invest between 75% and 85% of its assets directly in real estate or in real estate-related investments, with the remainder of its assets invested in publicly-traded securities and other instruments easily converted to cash to maintain adequate liquidity.

The TIAA Separate Account VA-3 ("VA-3") is a segregated investment account organized on May 17, 2006 under the laws of the State of New York for the purposes of funding individual and group variable annuities for retirement plans of employees of colleges, universities, other educational and research organizations, and other governmental and non-profit institutions. VA-3 is registered with the Commission as an investment company under the Investment Company Act of 1940, effective September 29, 2006, and operates as a unit investment trust.

The TIAA Stable Value Separate Account ("TSV") is an insulated, non-unitized separate account established on March 31, 2010 qualifying under New York Insurance Law 4240(a)(5)(ii). The Separate Account supports a flexible premium group deferred fixed annuity contract intended to be offered to employer sponsored retirement plans. The assets of this account are carried at book value.

In accordance with the domiciliary state procedures for approving items within the separate accounts, the separate accounts classification of the following items are supported by a specific state statute:

Product Identification	Product Classification	State Statute Reference
TIAA Separate Account VA-1	Variable annuity	Section 4240 of the New York Insurance Law
TIAA Real Estate Account	Variable annuity	Section 4240 of the New York Insurance Law
TIAA Separate Account VA-3	Variable annuity	Section 4240 of the New York Insurance Law
TIAA Stable Value	Group deferred fixed annuity	Section 4240(a)(5)(ii) of the New York Insurance Law

The legal insulation of the separate account assets prevents such assets from being generally available to satisfy claims resulting from the general account.

The Company's separate account statement includes legally insulated assets as of December 31 attributed to the following products (in millions):

Product	201	9	2018
TIAA Real Estate Account	\$	27,803	\$ 26,181
TIAA Separate Account VA-3		13,239	9,935
TIAA Separate Account VA-1		1,112	928
TIAA Stable Value		1,673	1,245
Total	\$	43,827	\$ 38,289

In accordance with the products recorded within the separate accounts, some separate account liabilities are guaranteed by the general account. In accordance with the guarantees provided, if the investment proceeds are

insufficient to cover the rate of return guaranteed for the product, the policyholder proceeds will be remitted by the general account.

The general account provides the REA with a liquidity guarantee to ensure it has funds available to meet participant transfer or cash withdrawal requests. When the REA cannot fund participant requests, the general account will fund the requests by purchasing accumulation units in the REA. Under this agreement, the Company guarantees participants will be able to redeem their accumulation units at their accumulation unit value determined after the transfer or withdrawal request is received in good order.

Additional information regarding separate accounts of the Company is as follows for the years ended December 31, (in millions):

	2019							
	in Gu les	Non- dexed arantee s than/ al to 4%	ind Gua mor	on- lexed rantee e than 4%	S	Non- aranteed eparate ccounts		Total
Premiums, considerations or deposits	\$	711	\$	_	\$	4,475	\$	5,186
Reserves								
For accounts with assets at:								
Fair value	\$	_	\$	_	\$	41,653	\$	41,653
Amortized cost		1,606		_		_		1,606
Total reserves	\$	1,606	\$		\$	41,653	\$	43,259
By withdrawal characteristics:								
Subject to discretionary withdrawal:								
At book value without market value adjustment and with current surrender charge of 5% or less*	\$	1,606	\$	_	\$	_	\$	1,606
At fair value		_		_		41,653		41,653
Total reserves	\$	1,606	\$		\$	41,653	\$	43,259
*Withdrawable at book value without adjustment of	or charg	je.						

Non-Nonindexed indexed Nonguaranteed Guarantee Guarantee less than/ more than Separate equal to 4% 4% Accounts **Total** 459 \$ \$ \$ Premiums, considerations or deposits 4,376 4,835 Reserves For accounts with assets at: 36,703 Fair value \$ \$ 36,703 Amortized cost 1,205 1,205 1,205 \$ 36,703 37,908 **Total reserves** \$ \$ \$ By withdrawal characteristics: Subject to discretionary withdrawal: At book value without market value adjustment and with current surrender charge of 5% or less* \$ 1,205 \$ \$ 1,205 36,703 36,703 At fair value

2018

\$

36.703

37.908

Total reserves

1.205

\$

^{*}Withdrawable at book value without adjustment or charge.

	2017								
	ind Gua less eq	lon- dexed arantee s than/ ual to 4%	ind Guar more	on- exed rantee e than	gua Se	Non- aranteed eparate ccounts		Total	
Premiums, considerations or deposits	\$	460	\$	_	\$	4,547	\$	5,007	
Reserves									
For accounts with assets at:									
Fair value	\$	_	\$	_	\$	36,388	\$	36,388	
Amortized cost		932		_				932	
Total reserves	\$	932	\$		\$	36,388	\$	37,320	
By withdrawal characteristics:									
Subject to discretionary withdrawal:									
At book value without market value adjustment and with current surrender charge of 5% or less*	\$	932	\$	_	\$	_	\$	932	
At fair value		_		_		36,388		36,388	
Total reserves	\$	932	\$	_	\$	36,388	\$	37,320	

^{*}Withdrawable at book value without adjustment or charge.

The following is a reconciliation of transfers to (from) the Company to the Separate Accounts for the years ended December 31, (in millions):

	 2019	2018	2017
Transfers reported in the Summary of Operations of the separate accounts statement:			
Transfers to separate accounts	\$ 5,513	\$ 5,124	\$ 5,296
Transfers from separate accounts	(4,355)	(4,682)	(4,173)
Transfers reported in the Summary of Operations of the Life, Accident & Health Annual Statement	\$ 1,158	\$ 442	\$ 1,123

Note 14 – Policy and Contract Reserves

Policy and contract reserves are determined in accordance with standard valuation methods approved by the Department and are computed in accordance with standard actuarial methodology. The reserves are based on assumptions for interest, mortality and other risks insured.

For annuities and supplementary contracts, policy and contract reserves are calculated using Commissioner's Annuity Reserve Valuation Method ("CARVM") in accordance with New York State Regulation 151, Actuarial Guideline 43 for variable annuity products and Actuarial Guideline 33 for all other products.

The Company has established policy reserves on deferred and payout annuity contracts issued January 1, 2001 and later that exceed the minimum amounts determined under Appendix A-820, "Minimum Life and Annuity Reserve Standards" of NAIC SAP. The excess above the minimum is as follows (in millions):

	December 31, 2019	December 31, 2018
Deferred and payout annuity contracts issued after 2000	4,156	4,160

The Company performed asset adequacy analysis in order to test the adequacy of its reserves in light of the assets supporting such reserves and determined that its reserves are sufficient to meet its obligations.

For ordinary and collective life insurance, reserves for all policies are calculated in accordance with New York State Insurance Regulation 147. Reserves for regular life insurance policies are computed by the Net Level Premium

method for issues prior to January 1, 1990, and by the Commissioner's Reserve Valuation Method for the vast majority of issues on and after such date. Five-year renewable term policies issued on or after January 1, 1994 use the greater of unitary and segmented reserves, where each segment is equal to the term period. Annual renewable term policies and cost of living riders issued on and after January 1, 1994 uses the segmented reserves, where each segment is equal to one year in length.

Liabilities for incurred but not reported life insurance claims and disability waiver of premium claims are based on historical experience and set equal to a percentage of paid claims. Reserves for amounts not yet due for incurred but not reported disability waiver of premium claims are a percentage of the total active lives disability waiver of premium reserve.

As of December 31, 2019 and 2018, the Company had \$285 million and \$320 million, respectively, of insurance in force for which the gross premiums were less than the net premiums according to the standard of valuation set by the Department.

The Tabular Interest, Tabular Less Actual Reserve Released and Tabular Cost are determined by formulae as prescribed by the NAIC except for deferred annuities, for which tabular interest is determined from the basic data.

Withdrawal characteristics of individual annuity reserves, group annuity reserves, and deposit-type contract funds for the years ended December 31, are as follows (in millions):

			2019		
INDIVIDUAL ANNUITIES:	General Account	Separate Account with Guarantees	Separate Account Nonguaranteed	Total	% of Total
Subject to Discretionary Withdrawal:			,		
At fair value	\$ —	- \$ —	\$ 24,890	\$ 24,890	13.1%
At book value without adjustment (minimal or no charge or adjustment)	31,760	_	_	31,760	16.8%
Not subject to discretionary withdrawal	132,718	_	_	132,718	70.1%
Total (direct + assumed)	\$164,478	\$ -	\$ 24,890	\$189,368	100.0%
Reinsurance ceded	_	_	_	_	
Total (net)	\$164,478	\$ _	\$ 24,890	\$189,368	· :
			2018		$\overline{}$
INDIVIDUAL ANNUITIES:	General Account	Separate Account with Guarantees	Separate Account Nonguaranteed	Total	% of Total
Subject to Discretionary Withdrawal:					
At fair value	\$ —	\$ —	\$ 22,649	\$ 22,649	12.1%
At book value without adjustment (minimal or no charge or adjustment)	32,596	_	_	32,596	17.4%
Not subject to discretionary withdrawal	132,024	_	_	132,024	70.5%
Total (direct + assumed)	\$ 164,620	\$ —	\$ 22,649	\$187,269	100.0%
Reinsurance ceded	_	_	_	_	
Total (net)	\$ 164,620	\$ —	\$ 22,649	\$187,269	1
		,	2019		
GROUP ANNUITIES:	General Account	Separate Account with Guarantees	Separate Account Nonguaranteed	Total	% of Total
Subject to Discretionary Withdrawal:					
At fair value	\$ —	\$ —	\$ 16,750	\$ 16,750	24.3%
At book value without adjustment (minimal or no charge or adjustment)	27,897	1,598	_	29,495	42.9%
Not subject to discretionary withdrawal	22,559			22,559	32.8%
Total (direct + assumed)	\$ 50,456	\$ 1,598	\$ 16,750	\$ 68,804	100.0%
Reinsurance ceded					
Total (net)	\$ 50,456	\$ 1,598	\$ 16,750	\$ 68,804	

						2018			
GROUP ANNUITIES:		eneral ccount	Ac	Separate count with uarantees	No	Separate Account onguaranteed		Total	% of Total
Subject to Discretionary Withdrawal:									
At fair value	\$	_	\$	_	\$	14,042	\$	14,042	22.9%
At book value without adjustment (minimal or no charge or adjustment)		24,969		1,200		_		26,169	42.6%
Not subject to discretionary withdrawal		21,222		_		_		21,222	34.5%
Total (direct + assumed)	\$	46,191	\$	1,200	\$	14,042	\$	61,433	100.0%
Reinsurance ceded		_		_		_		_	
Total (net)	\$	46,191	\$	1,200	\$	14,042	\$	61,433	· -
	Г					2019			
DEPOSIT-TYPE CONTRACTS: (no life contingencies)		eneral ccount	Ac	Separate count with uarantees	No	Separate Account onguaranteed		Total	% of Total
Subject to Discretionary Withdrawal:									
At fair value	\$	_	\$	_	\$	14	\$	14	0.8%
At book value without adjustment (minimal or no charge or adjustment)		1,140		7		_		1,147	70.8%
Not subject to discretionary withdrawal		460		_		_		460	28.4%
Total (direct + assumed)	\$	1,600	\$	7	\$	14	\$	1,621	100.0%
Reinsurance ceded		_		_		_		_	
Total (net)	\$	1,600	\$	7	\$	14	\$	1,621	· -
	Г					2018			
DEPOSIT-TYPE CONTRACTS: (no life contingencies)		eneral ccount	Acc	eparate count with arantees		Separate Account nguaranteed	٦	Total	% of Total
Subject to Discretionary Withdrawal:									
At fair value	\$	_	\$	_	\$	12	\$	12	1.1%
At book value without adjustment (minimal or no charge or adjustment)		1,105		5		_		1,110	98.9%
Not subject to discretionary withdrawal		_		_		_		_	—%
Total (direct + assumed)	\$	1,105	\$	5	\$	12	\$	1,122	100.0%
Reinsurance ceded		_		_		_			
Total (net)	\$	1,105	\$	5	\$	12	\$	1,122	

Note 15 - Management Agreements

Under Cash Disbursement and Reimbursement Agreements, the Company serves as the common pay-agent for certain subsidiaries and affiliates. Under management agreements, the Company provides investment advisory and administrative services for TIAA Life and administrative services to TIAA, FSB ("the Bank") and VA-1. Additionally, effective December 26, 2016, the Company entered into a General Service and Facilities Agreements with Nuveen, LLC, for the Company to provide and receive general services at cost inclusive of charges for overhead.

As the common pay-agent, the Company allocated expenses of \$2,002 million, \$2,122 million and \$1,924 million to its various subsidiaries and affiliates for the years ended December 31, 2019, 2018 and 2017, respectively. The expense allocation process determines the portion of the operating expenses attributable to each legal entity based on defined allocation methodologies. These methodologies represent either shared or direct costs depending on the nature of the service provided. At the completion of the allocation process all expenses are assigned to a legal entity.

Activities necessary for the operation of the College Retirement Equities Fund ("CREF"), a companion organization of TIAA, are provided at-cost by the Company and two of its subsidiaries, TIAA-CREF Investment Management, LLC ("TCIM") and TIAA-CREF Individual and Institutional Services, LLC ("TC Services"). Such services are provided in accordance with an Administrative Service Agreement between CREF and the Company, Investment Management Agreement between CREF and TCIM, and a Principal Underwriting and Distribution Services Agreement between CREF and TC Services (collectively the "CREF Agreements"). The Company is the common pay-agent for CREF,

TCIM, and TC Services. The Company collects the investment management and distribution expense reimbursements from CREF and then remits those payments to TCIM and TC Services. The administration expenses incurred by the Company are included in operating expenses and offset against the related expense reimbursements received from CREF. The expense reimbursements under The CREF Agreements and the equivalent expenses, amounted to approximately \$667 million, \$731 million, and \$808 million for the years ended December 31, 2019, 2018 and 2017, respectively.

TC Services maintains a Distribution Agreement with the Company under which TC Services is the principal underwriter and distributor for variable annuities issued by the Company. TC Services also maintains a Distribution Agreement with the Company under which TC Services is the distributor for proprietary and nonproprietary mutual funds. Such activities performed by TC Services are on a cost reimbursement basis. The Company paid \$259 million, \$190 million and \$154 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Effective February 2019, the Company renewed a General Service Agreement whereby the Company provides general administrative services such as technology, marketing, finance, corporate overhead and individual advisory services to the Bank. Expense allocations to the Bank were \$105 million, \$109 million, and \$86M for the years ended December 31, 2019, 2018, and 2017, respectively.

Teachers Advisors, LLC ("Advisors") provides investment advisory services for VA-1, certain proprietary funds and other separately managed portfolios in accordance with investment management agreements. Nuveen Securities, LLC ("Securities"), an indirect subsidiary of Nuveen, LLC, and TC Services distribute variable annuity contracts for VA-1, REA and VA-3 as well as registered securities for certain proprietary funds and non-proprietary mutual funds.

January 1, 2018, the Company entered into Investment Management Agreements with Advisors and Nuveen Alternatives Advisors, LLC, wholly-owned subsidiaries of Nuveen, LLC, to manage, at a negotiated fee, investments held within the Company's General Account including investments owned by investment subsidiaries of the Company. The Company paid \$215 million and \$219 million to Advisors and \$219 million and \$203 million to Nuveen Alternatives Advisors, LLC, for the years ended December 31, 2019 and 2018, respectively.

January 1, 2018, the Company entered into an Omnibus Service Agreement with Nuveen, LLC, pursuant to which Nuveen, LLC directly or through its subsidiaries agreed to provide services complementary to investment management to the Company at cost, inclusive of charges for overhead. The Company paid \$7 million to Nuveen, LLC for the years ended December 31, 2019 and 2018, respectively.

Effective January 1, 2019, the Company entered into a sublease agreement for certain leases and leasehold improvements with Nuveen Services, LLC. The Company makes the applicable lease payments on behalf of Nuveen Services, LLC and then allocates those costs. Under the sublease agreement, the Company allocated \$15 million to Nuveen Services, LLC for the year ended December 31, 2019.

All services necessary for the operation of the TIAA Real Estate Separate Account ("REA") are provided at-cost by the Company and TC Services. The Company provides investment management and administrative services for the REA in accordance with an Investment Management and Administrative Agreement. Distribution services for the REA are provided in accordance with a Distribution Agreement among TC Services, the Company and the REA (collectively the "Agreements"). The Company and TC Services receive payments from the REA on a daily basis according to formulae established annually and adjusted periodically for performance of these Agreements. The daily fee is based on an estimate of the at-cost expenses necessary to operate the REA and is based on projected REA expense and asset levels, with the objective of keeping the fees as close as possible to actual expenses attributable to operating the REA. At the end of each quarter, any differences between the daily fees paid and actual expenses for the quarter are added to or deducted from REA's fee in equal daily installments over the remaining days in the immediately following quarter. Reimbursements collected under the Agreements amounted to approximately \$150 million, \$141 million, and \$157 million for the periods ended December 31, 2019, 2018 and 2017, respectively.

Effective February 2018, the Company entered into a Service Agreement with the Bank, whereby the Bank provides general services in support of the Company's and its subsidiaries' activities at cost inclusive of charges for overhead. The Company paid \$11 million and \$6 million to the Bank for the years ended December 31, 2019 and 2018, respectively.

The Bank services certain residential mortgage loans held by the Company. As of December 31, 2019 and 2018, the Company held \$734 million and \$825 million of residential mortgage loans serviced by the Bank, respectively.

Note 16 - Federal Income Taxes

By charter, the Company is a stock life insurance company operating on a non-profit basis. However, the Company has been fully subject to federal income taxation as a stock life insurance company since January 1, 1998.

The application of SSAP No. 101 Income Taxes requires a company to evaluate the recoverability of DTAs and to establish a valuation allowance if necessary to reduce the DTA to an amount which is more likely than not to be realized. Based on the weight of all available evidence, the Company has not recorded a valuation allowance on DTAs at December 31, 2019 or December 31, 2018.

Components of the net deferred tax asset/(liability) are as follows (in millions):

				12/3	31/2019					12	2/31/2018							
		(1)		, ,		(3) (Col 1+2) Total			(4) Ordinary		(5)	(6) (Col 4+5) Total		(7) (Col 1–4) Ordinary		(8) (Col 2–5)	(9) (Col 7+8)	
		Or	umary	C	apital	IC	otai	Or	umary	'	Capital	10	เสเ	Ord	inary	Capital	Total	
a)	Gross Deferred Tax Assets	\$	6,009	\$	271	\$	6,280	\$	6,115	\$	391	\$	6,506	\$	(106)	\$ (120)	\$ (226)	
b)	Statutory Valuation Allowance Adjustments		_		_		_		_		_		_		_	_		
c)	Adjusted Gross Deferred Tax Assets (a–b)		6,009		271		6,280		6,115		391		6,506		(106)	(120)	(226)	
d)	Deferred Tax Assets Non-admitted		2,847		_		2,847		3,135		_		3,135		(288)	_	(288)	
e)	Subtotal Net Admitted Deferred Tax Asset (c-d)		3,162		271		3,433		2,980		391		3,371		182	(120)	62	
f)	Deferred Tax Liabilities		545		482		1,027		499		470		969		46	12	58	
g)	Net Admitted Deferred Tax Assets/(Net Deferred Tax Liability) (e–f)	\$	2,617	\$	(211)	\$	2,406	\$	2,481	\$	(79)	\$	2,402	\$	136	\$ (132)	\$ 4	

			12/31/2019			12/31/2018				
Admission Calculation Components SSAP No. 101		(1)	(2)	(3) (Col 1+2)	(4)	(5)	(6) (Col 4+5)	(7) (Col 1–4)	(8) (Col 2–5)	(9) (Col 7+8)
CU	imponents SSAF No. 101	Ordinary	Capital	Total	Ordinary	Capital	Total	Ordinary	Capital	Total
a)	Federal Income Taxes Paid In Prior Years Recoverable Through Loss Carrybacks	\$ —	· \$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
b)	Adjusted Gross DTA Expected To Be Realized (Excluding The Amount of DTA From (a) above After Application of the Threshold Limitation.(The Lesser of (b)1 and (b)2 Below)	2,346	60	2,406	2,365	37	2,402	(19)	23	4
	Adjusted Gross DTA Expected to be Realized Following the Balance Sheet Date	2,346	60	2,406	2,365	37	2,402	(19)	23	4
	2. Adjusted Gross DTA Allowed per Limitation Threshold	XXX	xxx	5,466	XXX	XXX	5,355	xxx	XXX	111
c)	Adjusted Gross DTA (Excluding The Amount Of DTA From (a) and (b) above) Offset by Gross DTL	816	211	1,027	615	354	969	201	(143)	58
d)	DTA Admitted as the result of application of SSAP No. 101. Total ((a)+ (b)+(c))	\$ 3,162	\$ 271	\$ 3,433	\$ 2,980	\$ 391	\$ 3,371	\$ 182	\$ (120)	\$ 62

	2019	2018
Ratio percentage used to determine recovery period and threshold limitation amount	930%	828%
Amount of adjusted capital and surplus used to determine the threshold limitation in (b)2 above (in millions)	\$36,441	\$35,697

		12/31	1/2019			12/31/2018				Change		
Impact of Tax Planning Strategies: (in millions)		(1)		(2)		(3)	(4)		10	(5) (Col 1–3) Ordinary		(6) Col 2–4)
(iii milliono)	0	rdinary		Capital		Ordinary		Capital				Capital
Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage												
Adjusted Gross DTAs Amount From Above	\$	6,009	\$	271	\$	6,115	\$	391	\$	(106)	\$	(120)
Percentage Of Adjusted Gross DTAs By Tax Character Attributable To The Impact Of Tax Planning Strategies	—%		% —%		<u> </u>		%		%		— %	
Net Admitted Adjusted Gross DTAs Amount From Above Percentage Of Net Admitted Adjusted Gross DTAs By Tax	\$	3,162	\$	271	\$	2,980	\$	391	\$	182	\$	(120)
Character Admitted Because Of The Impact Of Tax Planning Strategies		10.34%	, o	— %	, 0	—%		—%		10.34%		-%

The Company does not have tax-planning strategies that include the use of reinsurance.

The Company has no temporary differences for which DTLs are not recognized.

Income taxes incurred consist of the following major components (in millions):

	:	2019		2018		2017
Current Income Tax:	•	(400)	•	(220)	•	(000)
Federal income tax expense (benefit)	\$	(189)	\$	(330)	\$	(698)
Foreign taxes	<u> </u>	(189)	Φ.	(330)	Φ.	(608)
Subtotal Enderel income toyon expense on not capital gains	\$	204	\$	431	Ф	(698) 619
Federal income taxes expense on net capital gains						
Generation/(utilization) of loss carry-forwards		(15)		(101)		79 11
Intercompany tax sharing expense/(benefit) Other		(2) 19		(6) (17)		11 (15)
Federal and foreign income tax expense / (benefit)	\$	17	\$	(23)	\$	(4)
	12/3	31/2019	12/	31/2018		Change
Deferred Tax Assets:						
Ordinary:						
Policyholder reserves	\$	582	\$	572	\$	10
Investments		608		600		8
Policyholder dividends accrual		397		395		2
Fixed assets		202		188		14
Compensation and benefits accrual		285		300		(15)
Net operating loss carry-forward		675		661		14
Other (including items < 5% of total ordinary tax assets)		551		510		41
Intangible assets – business in force and software		2,709		2,889		(180)
Subtotal	\$	6,009	\$	6,115	\$	(106)
Statutory valuation allowance adjustment	\$	_	\$	_	\$	_
Non-admitted		2,847		3,135		(288)
Admitted ordinary deferred tax assets	\$	3,162	\$	2,980	\$	182
Capital:						
Investments	\$	251	\$	371	\$	(120)
Real estate		20		20		_
Subtotal	\$	271	\$	391	\$	(120)
Statutory valuation allowance adjustment		_		_		
Non-admitted		_		_		_
Admitted capital deferred tax assets		271		391		(120)
Admitted deferred tax assets	\$	3,433	\$	3,371	\$	62
	42/	31/2019	42/	31/2018		Change
Deferred Tax Liabilities:		31/2019	121	31/2010		Change
Ordinary:						
Investments	\$	235	\$	138	\$	97
Reserves transition adjustment	•	307	*	359	•	(52)
Other (including items < 5% of total ordinary tax liabilities)		3		2		1
Subtotal	\$	545	\$	499	\$	46
Capital:						
Investments		482		470		12
Subtotal	\$	482	\$	470	\$	12
Deferred tax liabilities	\$	1,027	\$	969	\$	58
Net Deferred Tax:						
Assets/Liabilities	\$	2,406	\$	2,402	\$	4

The provision for federal and foreign income taxes incurred differs from the amount obtained by applying the statutory federal income tax rate to income before income taxes. The significant items causing this difference at December 31, 2019 are as follows (in millions):

Description	Тах	Effect	Effective Tax Rate
Provision computed at statutory rate	\$	387	21.00 %
Dividends received deduction		(80)	(4.35)%
Amortization of interest maintenance reserve		(56)	(3.04)%
Statutory impairment of affiliated common stock		41	2.23 %
Current year deferred only adjustments		(36)	(1.95)%
Tax effect of change in net unrealized capital gains & losses		58	3.15 %
Other		(13)	(0.68)%
Total statutory income taxes	\$	301	16.36 %
Federal and foreign income tax incurred - Ordinary	\$	17	0.94 %
Federal and foreign income tax incurred - Capital		_	— %
Change in net deferred income tax charge (benefit)		284	15.42 %
Total statutory income taxes	\$	301	16.36 %

As of December 31, 2019, the Company had the following net operating loss carry forwards (in millions):

Year Incurred	Op	erating Loss	Year of Expiration
2008	\$	451	2023
2012		1,267	2027
2014		357	2029
2015		860	2030
2016		1	2031
2017		275	2032
2018		2	Indefinite
Total	\$	3,213	

As of December 31, 2019, the Company has foreign tax credit carry forwards with expiration dates through the year 2029 (in millions):

Year Incurred	Forei Cı	ign Tax redit	Year of Expiration
2015	\$	5	2025
2018		2	2028
2019		3	2029
Total	\$	10	

Due to the Tax Cuts and Jobs Act, carryback of NOLs generated after December 31,2017 are disallowed. Consequentially, ordinary income tax paid in year 2017 and prior may not be recouped in the event of future net losses. There was no tax expense for 2017 through 2019 that is available for recoupment.

At December 31, 2019, and 2018, the Company has no capital loss carry forwards.

At December 31, 2019, the Company has general business credits of \$32 million generated during the years 2004 to 2018 and expiring between 2024 to 2038.

The Company does not have any protective tax deposits on deposit with the Internal Revenue Service under IRC Section 6603.

Beginning in 1998, the Company filed a consolidated federal income tax return with its includable affiliates (the "consolidating companies"). The consolidating companies participate in tax-sharing agreements. Under the general agreement, which applies to all of the below listed entities except those denoted with an asterisk (*), current federal income tax expense (benefit) is computed on a separate return basis and provides that members shall make payments or receive reimbursements to the extent their income (loss) contributes to or reduces consolidated federal tax expense. The consolidating companies are reimbursed for net operating losses or other tax attributes they have generated when utilized in the consolidated return.

- 1) 730 Texas Forest Holdings, Inc.
- 2) AMC Holding, Inc.
- 3) Business Property Lending, Inc.
- 4) CustomerOne Financial Network, Inc.
- 5) Elite Lender Services, Inc.
- 6) EverTrade Direct Brokerage, Inc.
- 7) GreenWood Resources, Inc.
- 8) JWL Properties, Inc.
- 9) MyVest Corporation
- 10) ND Properties, Inc.
- 11) NIS/R&T, Inc.*
- 12) Nuveen Holdings, Inc.*
- 13) Nuveen Holdings I, Inc. *
- 14) Nuveen Investments, Inc.*
- 15) Nuveen Investments Holdings, Inc.*
- 16) Nuveen Securities, LLC*
- 17) Oleum Holding Company, Inc.
- 18) T-C Europe Holding, Inc.

- 19) T-C SP, Inc.
- 20) T-Investment Properties Corp.
- 21) Teachers Personal Investors Services, Inc.
- 22) Terra Land Company
- 23) TIAA-CREF Life Insurance Company
- 24) TIAA Board of Overseers
- 25) TIAA-CREF Tuition Financing, Inc.
- 26) TIAA Commercial Finance, Inc.
- 27) TIAA FSB Holdings, Inc.
- 28) TIAA, FSB
- 29) Tygris Asset Finance, Inc.
- 30) Tygris Commercial Finance Group, Inc.
- 31) Westchester Group Asset Management, Inc.
- 32) Westchester Group Farm Management, Inc.
- 33) Westchester Group Investment Management Holding Company, Inc.
- 34) Westchester Group Investment Management, Inc.
- 35) Westchester Group Real Estate, Inc.

The companies denoted with an asterisk above (collectively, "Nuveen subgroup"), are subject to a separate tax sharing agreement, under which current federal income tax expense (benefit) is computed on a separate subgroup return basis. Under the Agreement, Nuveen Holdings I, Inc. makes payments to TIAA for amounts equal to the federal income payments that the Nuveen subgroup would be obliged to pay the federal government if the Nuveen subgroup had actually filed a separate consolidated tax return. Nuveen Holdings I, Inc. is reimbursed for the subgroup losses to the extent that the subgroup tax return reflects a tax benefit that the Nuveen subgroup could have carried back to a prior consolidated return year.

Amounts receivable from (payable to) the Company's subsidiaries for federal income taxes are (\$14) million and (\$45) million at December 31, 2019 and 2018, respectively.

The Company's tax years 2014 through 2018 are open to examination by the Internal Revenue Service ("IRS").

As of December 31, 2019, the Company had no repatriation transition tax liability.

Note 17 - Pension Plan and Post-retirement Benefits

The Company maintains a qualified, non-contributory defined contribution money purchase plan covering substantially all employees, including employees of Nuveen Services, LLC and TIAA, FSB. All employee plan liabilities are fully funded through retirement annuity contracts. Contributions are made to each participant's contract based on a percentage of salary, with the applicable percentage varying by attained age. All contributions are fully vested after three years of service. Forfeitures arising from terminations prior to vesting are used to reduce future employer contributions. The statements of operations include contributions to the plan of approximately \$58 million, \$53 million

and \$58 million for the years ended December 31, 2019, 2018 and 2017, respectively. This includes supplemental contributions made to company-owned annuity contracts under a non-qualified deferred compensation plan.

The Company previously provided pension benefits through an unfunded Supplemental Executive Retirement Plan ("SERP") to certain select executives and any TIAA associate deemed eligible by the Board of Trustees. The SERP provided an annual retirement benefit payable at normal retirement. The obligations of the Company under the SERP are unfunded, unsecured promises to make future payments. As such, the plan has no assets. Contributions for a given period are equal to the benefit payments for that period. The benefit obligation and net periodic benefit cost of this plan for the years ended December 31, are as follows (in millions):

	\$ERP 2019 \$ 2018 \$ 38 \$ 37 \$						
	 2019		2018		2017		
Benefit obligation	\$ 38	\$	37	\$	41		
Net period benefit cost	\$ 2	\$	2	\$	2		

In addition to the defined contribution plan and SERP, the Company provides certain other post-retirement life and health insurance benefits to eligible retired employees who meet prescribed age and service requirements. The benefit obligation and net periodic benefit cost of this plan for the years ended December 31, are as follows (in millions):

	Р	ost-retirem	ent Benefit	:S		
	 2019			2017		
Benefit obligation	\$ 75	\$	74	\$	102	
Net period benefit cost	\$ (1)	\$	2	\$	1	

Note 18 - Repurchase and Securities Lending Programs

Repurchase Program

The Company has a repurchase program to sell and repurchase securities for the purposes of providing additional liquidity. For repurchase agreements, the Company's policy requires a minimum of 95% of the fair value of securities transferred under repurchase agreements to be maintained as collateral.

The Company has procedures in place to monitor the value of the collateral held and the fair value of the securities transferred under the agreements. If at any time the value of the collateral received from the counterparty falls below 95% of the fair value of the securities transferred, the Company is entitled to receive additional collateral from its counterparty. The Company monitors the estimated fair value of the securities sold under the agreements on a daily basis with additional collateral sent/obtained a necessary. If the counterparty were to default on its obligation to return the securities sold under the agreement on the repurchase date, the Company has the right to retain the collateral.

During the years ended December 31, 2019 and 2018, the Company engaged in certain repurchase transactions as cash taker. These transactions were "bilateral" in nature and the Company did not engage in any "Tri-party" repurchase transactions during the year. Additionally, there were no securities sold during the years ended December 31, 2019 and 2018 that resulted in default.

As of December 31, 2019 and 2018, the Company had no outstanding repurchase agreements.

Securities Lending Program

The Company has a securities lending program whereby it may lend securities to qualified institutional borrowers to earn additional income. The Company receives collateral (in the form of cash) against the loaned securities and maintains collateral in an amount not less than 102% of the market value of loaned securities during the period of the loan; any additional collateral required due to changes in security values is delivered to the Company the next business day. Cash collateral received by the Company will generally be invested in high-quality short-term instruments or bank deposits.

As of December 31, 2019, the estimated fair value of the Company's securities on loan under the program was \$355 million. The estimated fair value of collateral held by the Company for the bonds on loan as of December 31, 2019, was reported in "Securities lending collateral assets" with an offsetting collateral liability of \$363 million included in "Payable for collateral for securities loaned". This collateral received is cash and has not been sold or re-pledged as of December 31, 2019.

Of the cash collateral received from the program, \$363 million is held as cash as of December 31, 2019. Thus, the collateral remains liquid and could be returned in the event of a collateral call. The amortized cost and fair value of the reinvested cash collateral by the maturity date of the invested asset is as follows (in millions):

	Amorti	zed Cost	Fair Value		
Open	\$	363	\$	363	
Total collateral reinvested	\$	363	\$	363	

As of December 31, 2018 the estimated fair value of the Company's securities on loan under the program was \$548 million. The estimated fair value of collateral held by the Company for the bonds on loan as of December 31,2018, was reported in "Securities lending collateral assets" with an offsetting collateral liability of \$562 million included in "Payable for collateral for securities loaned." This collateral received was cash and had not been sold or re-pledged as of December 31, 2018.

Of the cash collateral received from the program, \$392 million was held as cash as of December 31, 2018, with the remaining \$170 million invested in overnight Treasury reverse repurchase agreements. Thus, the collateral was liquid and could have been returned in the event of a collateral call. The amortized cost and fair value of the reinvested cash collateral by the maturity date of the invested asset is as follows (in millions):

Amort	ized Cost	Fa	ir Value
\$	392	\$	392
	170		170
\$	562	\$	562
	\$	\$ 392 170	\$ 392 \$ 170

Note 19 - Federal Home Loan Bank of New York Membership and Borrowings

The Company is a member of the FHLBNY. Through its membership, the Company has the ability to conduct business activity ("Advances") with the FHLBNY. It is part of the Company's strategy to utilize these funds to provide additional liquidity to supplement existing sources. The Company is required to pledge collateral to the FHLBNY in the form of eligible securities for all advances received. The Company considers the amount of collateral pledged to the FHLBNY as the amount encumbered by advances from the FHLBNY at a point in time. The Company has determined the estimated maximum borrowing capacity as about \$15,780 million. The Company calculated this amount using 5% of total net admitted assets at the current reporting date.

The following table shows the FHLBNY capital stock held as of December 31, (in millions):

			20	019					2	2018	
	T	Total		General Account		Separate Account		Total	General Account		arate count
Membership stock - class A	\$	_	\$	_	\$	_	\$		\$		\$
Membership stock - class B		84		84		_		82		82	_
Activity stock		21		21		_		_		_	_
Excess stock		_		_		_		_		_	_
Total	\$	105	\$	105	\$		\$	82	\$	82	\$

Membership stock at December 31, 2019 and 2018, is not eligible for redemption.

The Company had \$460 million in funding agreements outstanding at December 31, 2019. No borrowings or funding agreements were outstanding as of December 31, 2018.

The following table shows the maximum collateral pledged to FHLBNY during the year ending December 31, (in millions):

		2019			2018								
	Fair Value	Carrying Value		Amount Borrowed at Time of Maximum Collateral		r Value		ırrying /alue	Amount Borrowed at Time of Maximum Collateral				
General account	\$ 1,375	\$ 1,333	\$	1,285	\$	1,390	\$	1,359	\$	1,300			
Separate account	_	_		_		_		_		_			
Total	\$ 1,375	\$ 1,333	\$	1,285	\$	1,390	\$	1,359	\$	1,300			

The following table shows the maximum borrowing from FHLBNY during the year ending December 31, (in millions):

			2019		2018								
	 Γotal	General Separate				Total		eneral ccount	Separate Account				
Debt	\$ 1,285	\$	1,285	\$	_	\$	1,300	\$	1,300	\$			
Funding agreements	_		_		_		_		_		_		
Other	_		_		_		_		_		_		
Total	\$ 1,285	\$	1,285	\$		\$	1,300	\$	1,300	\$			

Note 20 - Capital and Contingency Reserves and Shareholders' Dividends Restrictions

The portion of contingency reserves represented or reduced by each item below for the years ended December 31 are as follows (in millions):

	2019	2018		2017	
Change in net unrealized capital gains (losses)	\$ 118	\$	(359)	1,070	
Change in asset valuation reserve	(1,063)		129	(1,221)	
Change in net deferred income tax	(284)		(147)	(4,554)	
Change in non-admitted assets	365		708	3,402	
Change in post-retirement benefit liability	(8)		7	(5)	

As of December 31, 2019 and 2018, the portion of contingency reserves represented by cumulative net unrealized gains was \$2,616 million and \$2,498 million, gross of deferred taxes, respectively.

Capital: The Company has 2,500 shares of Class A common stock authorized, issued and outstanding. All of the outstanding common stock of the Company is held by the TIAA Board of Overseers, a not-for-profit corporation created for the purpose of holding the common stock of the Company. By charter, the Company operates without profit to its sole shareholder.

Surplus Notes: On May 8, 2017, the Company issued surplus notes in an aggregate principal amount of \$2,000 million. The notes bear interest at an annual rate of 4.270%, and have a maturity date of May 15, 2047. Proceeds from the issuance of the notes were \$1,994 million, net of issuance discount. Interest on the notes is scheduled to be paid semiannually on May 15 and November 15 of each year through the maturity date.

In May 2017, the Company completed a tender offer in which it extinguished \$950 million principal of its 6.850% surplus notes issued on December 16, 2009 and due to mature on December 16, 2039. The 2017 interest paid was \$26 million and total interest paid was \$481 million on the tendered notes. The Company paid a premium of \$373 million due to the early redemption of these surplus notes which is reported in net operating expenses.

The following table provides information related to the Company's outstanding surplus notes as of December 31, 2019 (in millions):

Date Issued	Interest Rate	(F	Par Value Face Amount of Notes)	С	arrying Value of Note	_	nterest Paid Year to Date	Principal and / or Interest Paid Inception to Date	Date of Maturity
12/16/2009	6.850%	\$	1,050	\$	1,049	\$	72	\$ 719	12/16/2039
09/18/2014	4.900%		1,650		1,649		81	404	09/15/2044
09/18/2014	4.375% *		350		349		15	76	09/15/2054
05/08/2017	4.270%		2,000		1,994		85	215	05/15/2047
Total		\$	5,050	\$	5,041	\$	253	\$ 1,414	

*The Company will bear interest at a fixed annual rate of 4.375% from and including September 18, 2014 to but excluding September 15, 2024 payable semi-annually in arrears on March 15 and September 15 of each year, commencing March 15, 2015, then at an annual floating rate equal to Three-Month LIBOR plus 2.661% from and including September 15, 2024 to but excluding the date on which the Fixed-to-Floating Rate Notes are paid in full, payable quarterly, in arrears on March 15, June 15, September 15 and December 15 of each year, commencing December 15, 2024.

The instruments listed in the above table, are unsecured debt obligations of the type generally referred to as "surplus notes" and are issued in accordance with Section 1307 of the New York Insurance Law. The surplus notes are subordinated in right of payment to all present and future indebtedness, policy claims and other creditor claims of the Company and rank *pari passu* with any future surplus notes of the Company and with any other similarly subordinated obligations.

The notes were issued in transactions pursuant to Rule 144A under the Securities Act of 1933, as amended, and the notes are evidenced by one or more global notes deposited with a custodian for, and registered in the name of a nominee of, The Depository Trust Company.

No subsidiary or affiliate of the Company is an obligor or guarantor of the notes, which are solely obligations of the Company. No affiliates of the Company hold any portion of the notes.

The notes are unsecured and subordinated to all present and future indebtedness, policy claims and other creditor claims of the Company. Under New York Insurance Law, the notes are not part of the legal liabilities of the Company. The notes are not scheduled to repay any principal prior to maturity. Each payment of interest and principal may be made only with the prior approval of the Superintendent and only out of the Company's surplus funds, which the Superintendent of the Department determines to be available for such payments under New York Insurance Law. In addition, provided that approval is granted by the Superintendent of the Department, the notes may be redeemed at the option of the Company at any time at the "make-whole" redemption price equal to the greater of the principal amount of the notes to be redeemed, or the sum of the present values of the remaining scheduled interest and principal payments, excluding accrued interest as of the redemption date, discounted to the redemption date on a semi-annual basis at the adjusted Treasury rate plus a pre-defined spread, plus in each case, accrued and unpaid interest payments on the notes to be redeemed to the redemption date.

Dividend Restrictions: Under the New York Insurance Law, the Company is permitted without prior insurance regulatory clearance to pay a stockholder dividend as long as the aggregated amount of all such dividends in any calendar year does not exceed the lesser of (i) 10% of its surplus to policyholders as of the immediately preceding calendar year and (ii) its net gain from operations for the immediately preceding calendar year (excluding realized investment gains). The Company has not paid dividends to its shareholder.

Note 21 - Contingencies and Guarantees

Subsidiary and Affiliate Guarantees:

At December 31, 2019, the Company has a financial support agreement with TIAA Life. Under this agreement, the Company will provide support so TIAA Life will have the greater of (a) capital and surplus of \$250 million, (b) the amount of capital and surplus necessary to maintain TIAA Life's capital and surplus at a level not less than 150% of the NAIC Risk Based Capital model or (c) such other amount as necessary to maintain TIAA Life's financial strength rating at least the same as the Company's rating at all times. Since this obligation is not subject to limitations, the Company does not believe that it is possible to determine the maximum potential amount that could become due under these guarantees in the future. At December 31, 2019, the capital and surplus of TIAA Life was in excess of the minimum capital and surplus amount referenced, and its total adjusted capital was in excess of the referenced RBC-based amount calculated at December 31, 2019.

The Company has agreed that it will cause TIAA Life to be sufficiently funded at all times in order to meet all its contractual obligations on a timely basis including, but not limited to, obligations to pay policy benefits and to provide policyholder services. This agreement is not an evidence of indebtedness or an obligation or liability of the Company and does not provide any creditor of TIAA Life with recourse to or against any of the assets of the Company.

The Company has unconditionally guaranteed \$1,000 million in 4.0% senior unsecured notes issued by Nuveen, LLC due in 2028. The Company agrees to cause any such payment to be made punctually when and as the same shall become due and payable, whether at maturity, upon acceleration, redemption, repayment or otherwise, and as if such payment were made by Nuveen, LLC. The guarantee is made to/on behalf of a wholly-owned subsidiary, and as such the liability is excluded from recognition. The maximum potential amount of future payments the Company could be required to make under the guarantee as of December 31, 2019, is \$1,367 million, which includes the future undiscounted interest payments. Should action under the guarantee be required, the Company would contribute cash to Nuveen, LLC, to fund the obligation, thereby increasing the Company's investment in Nuveen, LLC, as reported in other invested assets. Based on Nuveen, LLC's financial position and operations, the Company views the risk of performance under this guarantee as remote.

Additionally, the Company has the following agreements and lines of credit with subsidiaries, affiliates, and other related parties:

Related to the 2014 acquisition of Nuveen Investments, Inc., Nuveen Finance, the Acquirer and an indirectly owned subsidiary of TIAA, recorded contingent purchase related liabilities which were payable based upon contractual terms during 2017 and 2018. The Company had agreed to fund these obligations in the event required payments to Windy City Investments Holdings, L.L.C. ("WCLLC"), the seller of Nuveen Investments, Inc., are not made by Nuveen Finance. Nuveen Finance paid \$112 million of the liability during 2018, resulting in no remaining liability as of December 31, 2018. The \$112 million payment was related to an earn-out which had the potential to be up to \$278 million, pursuant to the terms of the Purchase and Sale Agreement, as amended. Subsequent to the earn-out payment, WCLLC filed a complaint in the Court of Chancery of the State of Delaware that generally alleges, among other things, that Nuveen, LLC improperly calculated the earn-out amount. Nuveen, LLC intends to defend against this lawsuit vigorously, but is unable to predict the outcome of this lawsuit or reasonably estimate a range of possible loss.

The Company provides a \$100 million unsecured 364-day revolving line of credit arrangement with TIAA Life. \$30 million of this facility is maintained on a committed basis with an expiration date of July 6, 2020. As of December 31, 2019, there were no balances outstanding.

The Company also provides a \$1,000 million uncommitted line of credit to certain accounts of CREF and certain TIAA-CREF Funds ("Funds"). Loans under this revolving credit facility are for a maximum of 60 days and are made solely at the discretion of the Company to fund shareholder redemption requests or other temporary or emergency needs of CREF and the Funds. As of December 31, 2019, there were no balances outstanding. It is the intent of the Company, CREF and the Funds to use this facility as a supplemental liquidity facility, which would only be used after CREF and the Funds have exhausted the availability of the current \$1,000 million committed credit facility maintained with a group of banks.

The Company guarantees CREF transfers to the Company for the immediate purchase of lifetime payout annuities will produce guaranteed payments that will never be less than the amounts calculated at the stipulated interest rate and mortality defined in the applicable CREF contract.

The Company also provides a \$300 million unsecured and uncommitted 364-day revolving line of credit arrangement with the Bank. This line has an expiration date of September 9, 2020. As of December 31, 2019, there were no balances outstanding.

The Company also provides a \$100 million committed 364-day revolving line of credit arrangement with Nuveen, LLC. This line has an expiration date of December 27, 2020. As of December 31, 2019, there were no balances outstanding.

The Company provided a \$23 million committed line of credit arrangement with TIAA Charitable, Inc. Effective September 20, 2019, the credit agreement was terminated, and all outstanding amounts advanced under the credit agreement through September 20, 2019, were forgiven.

Separate Account Guarantees: The Company provides mortality and expense guarantees to VA-1, for which it is compensated. The Company guarantees, at death, the total death benefit payable from the fixed and variable accounts will be at least a return of total premiums paid less any previous withdrawals. The Company also guarantees expense charges to VA-1 participants will never rise above the maximum amount stipulated in the contract.

The Company provides mortality, expense and liquidity guarantees to REA and is compensated for these guarantees. The Company guarantees once REA participants begin receiving lifetime annuity income benefits, monthly payments will never be reduced as a result of adverse mortality experience. The Company also guarantees expense charges to REA participants will never rise above the maximum amount stipulated in the contract. The Company provides REA with a liquidity guarantee to ensure it has funds available to meet participant transfer or cash withdrawal requests. If REA cannot fund participant requests, TIAA's general account will fund them by purchasing accumulation units. Under this agreement, TIAA guarantees that participants will be able to redeem their accumulation units at the accumulation unit value next determined after the transfer or withdrawal request is received in good order.

As of December 31, 2019, there are no outstanding liquidity units under the liquidity guarantee provided to REA by the Company.

The Company provides mortality and expense guarantees to VA-3 and is compensated for these guarantees. The Company guarantees once VA-3 participants begin receiving lifetime annuity income benefits, monthly payments will never be reduced as a result of adverse mortality experience. The Company also guarantees expense charges to VA-3 participants will never rise above the maximum amount stipulated in the contract.

Other Contingencies:

In the ordinary conduct of certain of its investment activities, the Company provides standard indemnities covering a variety of potential exposures. For instance, the Company provides indemnifications in connection with site access agreements relating to due diligence review for real estate acquisitions, and the Company provides indemnification to underwriters in connection with the issuance of securities by or on behalf of the Company or its subsidiaries. It is the Company management's opinion that the fair value of such indemnifications are negligible and do not materially affect the Company's financial position, results of operations or liquidity.

Other contingent liabilities arising from litigation and other matters over and above amounts already provided for in the financial statements or disclosed elsewhere in these notes are not considered material in relation to the Company's financial position or the results of its operations.

The Company receives and responds to subpoenas, examinations, or other inquiries from state and federal regulators, including state insurance commissioners; state attorneys general and other state governmental authorities; the SEC; federal governmental authorities; and the Financial Industry Regulatory Authority ("FINRA"), seeking a broad range of information. The Company cooperates in connection with these inquiries and believes the ultimate liability that could result from litigation and proceedings would not have a material adverse effect on the Company's financial position.

Note 22- Subsequent Events

In preparing these financial statements, the Company has evaluated events and transactions for potential recognition or disclosure through March 11, 2020, the date the financial statements were available to be issued.

As of March 11, 2020, sufficient information is not available to adequately evaluate the short-term or long-term impact to the Company as a result of the economic and market activities associated with the 2020 outbreak of COVID-19 ("Coronavirus").