TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA

Audited Statutory – Basis Financial Statements as of December 31, 2018 and 2017 and for the three years ended December 31, 2018

TEACHERS INSURANCE AND ANNUITY ASSOCIATION OF AMERICA
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DECEMBER 31, 2018

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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, 2018 and 2017, and the related statutory-basis statements of operations and changes in capital and contingency reserves, and of cash flows for each of the three years in the period ended December 31, 2018.

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 financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the 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 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 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, 2018 and 2017, or the results of its operations or its cash flows for each of the three years in the period ended December 31, 2018.

Opinion on Statutory Basis of Accounting

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, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in accordance with the accounting practices prescribed or permitted by the New York State Department of Financial Services described in Note 2.

PricewaterhouseCoopers LLP

New York, New York
March 14, 2019

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

	December 31,	
	2018	2017
ADMITTED ASSETS	(in millions)	
Bonds	$ 187,325	$ 184,895
Preferred stocks	245	338
Common stocks	5,899	5,680
Mortgage loans	29,959	26,597
Real estate	2,152	2,078
Cash, cash equivalents and short-term investments	598	640
Contract loans	1,890	1,680
Derivatives	968	244
Securities lending collateral assets	562	706
Other long-term investments	30,413	30,165
Investment income due and accrued	1,802	1,794
Net deferred federal income tax asset	2,402	1,964
Other assets	782	770
Separate account assets	38,289	37,596
TOTAL ADMITTED ASSETS	$ 303,286	$ 295,147
LIABILITIES, CAPITAL AND CONTINGENCY RESERVES		
Liabilities		
Reserves for life and health insurance, annuities and deposit-type contracts	$ 213,138	$ 207,664
Dividends due to policyholders	1,885	1,884
Interest maintenance reserve	2,149	2,136
Federal income taxes payable to affiliates	45	17
Asset valuation reserve	5,260	5,388
Derivatives	164	470
Payable for collateral for securities loaned	562	706
Other liabilities	3,712	2,981
Separate account liabilities	38,245	37,565
TOTAL LIABILITIES	265,160	258,811
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	33,082	31,292
TOTAL CAPITAL AND CONTINGENCY RESERVES	38,126	36,336
TOTAL LIABILITIES, CAPITAL AND CONTINGENCY RESERVES	$ 303,286	$ 295,147

See notes to statutory - basis financial statements

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

	For the Years Ended December 31,		
	2018	2017	2016
		(in millions)	
REVENUES			
Insurance and annuity premiums and other considerations	$ 16,220	$ 16,644	$ 16,595
Annuity dividend additions	1,761	1,503	1,970
Net investment income	12,550	11,875	11,907
Other revenue	379	371	325
TOTAL REVENUES	$ 30,910	$ 30,393	$ 30,797
BENEFITS AND EXPENSES			
Policy and contract benefits	$ 17,694	$ 16,206	$ 14,385
Dividends to policyholders	3,526	3,212	3,813
Increase in policy and contract reserves	5,279	6,115	7,461
Net operating expenses	1,882	2,123	1,620
Net transfers to separate accounts	442	1,123	1,851
TOTAL BENEFITS AND EXPENSES	$ 28,823	$ 28,779	$ 29,130
Income before federal income taxes and net realized capital gains (losses)	$ 2,087	$ 1,614	$ 1,667
Federal income tax expense (benefit)	(23)	(4)	16
Net realized capital gains (losses) less capital gains taxes, after transfers to the interest maintenance reserve	(657)	(598)	(161)
NET INCOME	$ 1,453	$ 1,020	$ 1,490

See notes to statutory - basis financial statements

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

	Capital Stock and Additional Paid-in Capital	Surplus Notes	Contingency Reserves	Total
		(in millions)		
Balance, December 31, 2015	$ 3	$ 4,000	$ 30,732	$ 34,735
Net income	—	—	1,490	1,490
Change in net unrealized capital gains on investments	—	—	(481)	(481)
Change in asset valuation reserve	—	—	(257)	(257)
Change in net deferred income tax	—	—	(272)	(272)
Change in post-retirement benefit liability	—	—	4	4
Change in non-admitted assets:				
Deferred federal income tax asset	—	—	271	271
Other assets	—	—	93	93
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
Change in 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 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

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

	For the Years Ended December 31,		
	2018	2017	2016
CASH FROM OPERATIONS		(in millions)	
Insurance and annuity premiums and other considerations	16,225	16,650	16,599
Net investment income	11,756	11,301	11,324
Miscellaneous income	365	361	317
Total receipts	28,346	28,312	28,240
Policy and contract benefits	17,633	16,128	14,449
Operating expenses	1,865	1,729	1,560
Dividends paid to policyholders	1,764	1,756	1,819
Federal income tax expense (benefit)	(63)	(16)	15
Net transfers to separate accounts	442	1,127	1,814
Total disbursements	21,641	20,724	19,657
Net cash from operations	6,705	7,588	8,583
CASH FROM INVESTMENTS			
Proceeds from investments sold, matured, or repaid:			
Bonds	17,950	27,267	25,064
Stocks	1,891	1,298	529
Mortgage loans and real estate	2,880	1,464	2,342
Other invested assets	2,368	2,213	2,314
Miscellaneous proceeds	1,182	52	622
Cost of investments acquired:			
Bonds	19,838	25,622	28,844
Stocks	1,716	3,489	1,005
Mortgage loans and real estate	6,482	6,684	4,593
Other invested assets	4,483	3,923	4,457
Miscellaneous applications	513	1,076	191
Net cash used in investments	(6,761)	(8,500)	(8,219)
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	15	24	(7)
Other cash provided (applied)	(1)	252	(285)
Net cash from (used in) financing and other	14	947	(292)
NET CHANGE IN CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS	(42)	35	72
CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS, BEGINNING OF YEAR	640	605	533
CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS, END OF YEAR	598	640	605

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.

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 Years Ended December 31,		
	SSAP#	F/S Line	2018	2017	2016
				(in millions)	
Net income, New York SAP			$ 1,453	$ 1,020	$ 1,490
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			$ 1,453	$ 1,021	$ 1,491
Capital and surplus, New York SAP			$ 38,126	$ 36,336	$ 35,583
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 and deposit-type contracts	22	22	21
Capital and surplus, NAIC SAP			$ 38,148	$ 36,358	$ 35,604

The Company’s risk based capital as of December 31, 2018 and 2017 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).

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 identified in the Purposes and Procedures Manual of the NAIC Investment Analysis Office as qualifying for bond treatment are stated at fair value.

Pursuant to the NAIC adopted modifications to SSAP No. 26R, *Bonds*, which were effective December 31, 2017, the Company holds Securities Valuations Office ("SVO") identified bond exchange traded funds ("ETFs"). These ETFs are reported at fair value, and the Company has not elected systematic 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. The fair value of preferred stocks is determined using prices provided by independent pricing services or internally developed pricing models. 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. For common stocks without quoted market prices, fair value is estimated using independent pricing services or internally developed pricing models. 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 wholly-owned subsidiaries 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 wholly owned subsidiaries 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 U.S. GAAP or International Financial Reporting Standards, generally measured at fair value, 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 wholly-owned 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.

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):

	2018	2017	Change
Net deferred federal income tax asset	$ 3,135	$ 3,720	$ (585)
Furniture and electronic data processing equipment	430	532	(102)
Other long-term investments	167	126	41
Receivable from parent, subsidiaries and affiliates	—	27	(27)
Other	167	202	(35)
Total	$ 3,899	$ 4,607	$ (708)

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):

	2018	2017
EDP equipment and computer software	$ 1,691	$ 1,424
Furniture and equipment and leasehold improvements	$ 117	$ 102

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.

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.

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") in December of each year, and such dividends are credited to policyholders in the following calendar 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):

	2018	2017	2016
Exchange/transfer/conversion/distribution of invested assets	$ 3,403	$ 5,003	$ 2,753
Annuity dividend additions	$ 1,761	$ 1,503	$ 1,970
Capitalized interest	$ 397	$ 351	$ 310
Interest credited on deposit-type contracts	$ 28	$ 28	$ 23

Application of New Accounting Pronouncements:

In June 2016, the NAIC adopted substantive revisions to SSAP No. 51, *Life Contracts*, to incorporate references to the Valuation Manual ("VM") and to facilitate the implementation of Principles-Based Reserving ("PBR"), which was effective on January 1, 2017. The adoption of PBR will be phased-in over three years, and only applies to new policies issued after the revised Standard Valuation Law and VM are in effect. Under the current system of reserving, formulas and assumptions are used to determine reserves as prescribed by state laws and regulations. Under PBR, companies will hold the higher of (a) the reserve using prescribed methods and assumptions and (b) the PBR reserve which considers a range of future economic conditions, computed using justified company experience factors, such as mortality, policyholder behavior and expenses. The adoption of the modifications to SSAP No. 51 relating to PBR will not affect the in-force block of business issued prior to the effective date.

In August 2016, the NAIC adopted and made effective modifications to SSAP No. 51, *Life Contracts*. These modifications clarify that annual assumption changes from reserving methods used in PBR would not qualify as a change in valuation basis. Changes in valuation basis are recorded directly to surplus instead of through income. This modification was made to accommodate PBR when it becomes effective and subsequent implementations.

In December 2018, the Company's state of domicile, New York, issued an emergency regulation to begin the implementation of principle-based reserving (PBR) to become effective on January 1, 2020. When New York final adopts PBR it will apply to the Company. Until New York adopts PBR, the Company will continue to follow New York requirements, which are formula based reserves. The Company continues to evaluate the NAIC guidance and does not anticipate 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):

	2018			
		Excess of		
	Book/ Adjusted Carrying Value	Fair Value Over Book/Adjusted Carrying Value	Book/Adjusted Carrying Value Over Fair Value	Estimated Fair 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	119,633	3,455	(3,124)	119,964
Hybrids	306	35	(9)	332
Parent, subsidiaries and affiliates	757	—	(29)	728
Total	$ 187,325	$ 7,162	$ (3,785)	$ 190,702

	2017			
		Excess of		
	Book/ Adjusted Carrying Value	Fair Value Over Book/Adjusted Carrying Value	Book/Adjusted Carrying Value Over Fair Value	Estimated Fair Value
Bonds:				
U.S. governments	$ 32,407	$ 3,330	$ (42)	$ 35,695
All other governments	5,071	473	(15)	5,529
States, territories and possessions	632	73	(1)	704
Political subdivisions of states, territories, and possessions	1,058	90	(10)	1,138
Special revenue and special assessment, non-guaranteed agencies and government	18,353	1,124	(63)	19,414
Credit tenant loans	9,324	792	(26)	10,090
Industrial and miscellaneous	116,877	7,697	(432)	124,142
Hybrids	343	73	(6)	410
Parent, subsidiaries and affiliates	830	—	(4)	826
Total	$ 184,895	$ 13,652	$ (599)	$ 197,948

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 twelve months			Twelve months or more		
	Amortized Cost	Gross Unrealized Loss	Estimated Fair Value	Amortized 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

	Less than twelve months			Twelve months or more		
	Amortized Cost	Gross Unrealized Loss	Estimated Fair Value	Amortized Cost	Gross Unrealized Loss	Estimated Fair Value
December 31, 2017						
Loan-backed and structured bonds	$ 4,983	$ (42)	$ 4,941	$ 6,388	$ (193)	$ 6,195
All other bonds	7,234	(111)	7,123	8,123	(278)	7,845
Total bonds	$ 12,217	$ (153)	$ 12,064	$ 14,511	$ (471)	$ 14,040
Unaffiliated common stocks	121	(4)	117	31	(8)	23
Total bonds and stocks	$ 12,338	$ (157)	$ 12,181	$ 14,542	$ (479)	$ 14,063

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):

	December 31, 2018		December 31, 2017	
	Book/ Adjusted Carrying Value	Estimated Fair Value	Book/ Adjusted Carrying Value	Estimated Fair Value
Due in one year or less	$ 2,575	$ 2,600	$ 2,929	$ 2,985
Due after one year through five years	27,520	27,601	24,316	25,260
Due after five years through ten years	37,358	36,622	39,020	40,492
Due after ten years	60,826	63,202	58,479	65,571
Subtotal	128,279	130,025	124,744	134,308
Residential mortgage-backed securities	29,468	30,926	31,760	33,980
Commercial mortgage-backed securities	10,407	10,285	10,358	10,503
Asset-backed securities	18,541	18,836	17,994	19,118
Exchange-traded funds	630	630	39	39
Subtotal	59,046	60,677	60,151	63,640
Total	$ 187,325	$ 190,702	$ 184,895	$ 197,948

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.

	2018	2017
Residential mortgage-backed securities	15.7%	17.2%
Manufacturing	11.1	11.5
Public utilities	10.2	10.2
Asset-backed securities	9.9	9.7
Other	8.7	7.9
U.S. governments	8.1	8.1
Services	7.9	7.3
Finance and financial services	7.0	6.9
Revenue and special obligations	6.4	5.8
Commercial mortgage-backed securities	5.6	5.6
Oil and gas	4.0	4.4
All other governments	2.8	2.7
Communications	2.6	2.7
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		2017	
NAIC 1 and 2	$ 168,570	90.0%	$ 167,373	90.5%
NAIC 3 through 6	18,755	10.0	17,522	9.5
Total	$ 187,325	100.0%	$ 184,895	100.0%

Sub-prime exposure: The following table presents the carrying value of the sub-prime residential mortgage-backed securities by investment grade as of December 31, (in millions):

	2018		2017	
NAIC 1 and 2	$ 1,023	98.6%	$ 1,431	98.7%
NAIC 3 through 6	14	1.4%	19	1.3%
Total	$ 1,037	100.0%	$ 1,450	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, 2018 and 2017, the Company recognized OTTI on loan-backed and structured securities of $26 million and $8 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):

	2018	2017
Carrying amount of bonds and stocks denominated in foreign currency	$ 3,361	$ 3,160
Carrying amount of bonds and stocks denominated in foreign currency which are collateralized by real estate	$ 757	$ 830

Structured Notes: The following table represents structured notes held as of December 31, (in millions):

2018

CUSIP Identification	Actual Cost	Fair Value	Book/Adjusted Carrying Value	Mortgage-Referenced Security (YES/NO)
912828S50	$ 10	$ 10	$ 11	NO
912810RW0	1,205	1,164	1,241	NO
Total	$ 1,215	$ 1,174	$ 1,252	

2017

CUSIP Identification	Actual Cost	Fair Value	Book/Adjusted Carrying Value	Mortgage-Referenced Security (YES/NO)
X77765AA7	$ 2	$ 2	$ 2	NO
912828S50	10	10	10	NO
912810RW0	809	862	816	NO
Total	$ 821	$ 874	$ 828	

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	2018	2017
Commercial loans	$ 26,274	$ 22,806
Mezzanine loans	2,568	2,563
Residential loans	1,117	1,228
Total	$ 29,959	$ 26,597

The maximum and minimum lending rates for mortgage loans originated or purchased during 2018 and 2017 are as follows:

	2018		2017	
Loan Type	**Maximum**	**Minimum**	**Maximum**	**Minimum**
Commercial loans	5.75%	2.83%	6.11%	2.90%
Mezzanine loans	6.71%	5.38%	9.16%	4.69%
Residential loans	N/A	N/A	4.15%	3.55%

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 2018 and 2017 are as follows:

	Maximum LTV	
Loan Type	**2018**	**2017**
Commercial loans	69.6%	79.9%
Mezzanine loans	73.7%	75.5%
Residential loans	N/A	74.9%

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, 2018 and 2017 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			
2018	**> 70%**	**< 70%**	**Total**	**% of Total**
Debt service coverage ratios:				
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%

	Recorded Investment - Commercial			
	Loan-to-value Ratios			
2017	**> 70%**	**< 70%**	**Total**	**% of Total**
Debt service coverage ratios:				
Greater than 1.20x	$ 2,175	$ 21,547	$ 23,722	93.1%
Less than 1.20x	483	1,161	1,644	6.5%
Construction	92	—	92	0.4%
Total	$ 2,750	$ 22,708	$ 25,458	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):

		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

		Residential		Commercial			
2017	**Farm**	**Insured**	**All Other**	**Insured**	**All Other**	**Mezzanine**	**Total**
Recorded investment							
Current	$ —	$ —	$ 1,227	$ —	$ 22,884	$ 2,574	$ 26,685
30-59 days past due	$ —	$ —	$ 4	$ —	$ —	$ —	$ 4
60-89 days past due	$ —	$ —	$ —	$ —	$ —	$ —	$ —
90-179 days past due	$ —	$ —	$ 1	$ —	$ —	$ —	$ 1
Participant or co-lender in a mortgage loan agreement							
Recorded investment	$ —	$ —	$ —	$ —	$ 4,235	$ 2,516	$ 6,751

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

	2018	2017
Mortgage Loans by Property Type (Commercial & Residential):	**% of Total**	**% of Total**
Office buildings	32.0%	32.4%
Shopping centers	26.3	28.9
Apartments	18.6	15.6
Industrial buildings	11.1	13.1
Other - commercial	8.3	5.4
Residential	3.7	4.6
Total	100.0%	100.0%

	2018		2017	
	% of Total		% of Total	
Mortgage Loans by Geographic Distribution:	**Commercial**	**Residential**	**Commercial**	**Residential**
South Atlantic	22.5%	15.8%	25.1%	16.0%
Pacific	18.2	44.6	17.4	44.4
South Central	14.1	6.7	14.6	6.8
Middle Atlantic	15.8	15.0	15.8	14.4
North Central	9.8	3.0	8.8	3.2
New England	7.5	5.6	8.4	5.5
Other	12.1	9.3	9.9	9.7
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):

	2018	2017
	Carrying Value	**Carrying Value**
Due in one year or less	$ 621	$ 571
Due after one year through five years	6,405	5,666
Due after five years through ten years	17,299	14,749
Due after ten years	5,634	5,611
Total	$ 29,959	$ 26,597

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, 2018 or 2017.

Note 5 – Real Estate

At December 31, 2018 and 2017, the Company's directly owned real estate investments, were carried net of third party mortgage encumbrances. There were $44 million of third party mortgage encumbrances as of December 31, 2018, and $5 million for December 31, 2017.

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

	2018	2017
Directly Owned Real Estate by Property Type:	**% of Total**	**% of Total**
Industrial buildings	36.4%	39.2%
Office buildings	28.9	28.5
Apartments	21.8	19.7
Retail	7.7	7.1
Mixed-use projects	3.9	4.2
Land under development	1.3	1.3
Total	100.0%	100.0%

	2018	2017
Directly Owned Real Estate by Geographic Region:	**% of Total**	**% of Total**
Pacific	61.9%	63.0%
South Atlantic	25.5	25.7
Middle Atlantic	7.1	8.4
South Central	3.8	2.1
North Central	1.7	0.8
Total	100.0%	100.0%

Note 6 - Subsidiary, controlled and affiliated entities

The Company holds interests in subsidiary, controlled and affiliated ("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):

	2018	2017
Net carrying value of the SCA entities		
Reported as common stock	$ 5,008	$ 4,665
Reported as other long-term investments	23,348	22,777
Total net carrying value	$ 28,356	$ 27,442

On June 9, 2017, the Company acquired EverBank Financial Corp ("EFC"), inclusive of its wholly-owned subsidiary EverBank, for $2,648 million. EverBank and TIAA-CREF Trust Company, FSB were subsequently combined under the legal name TIAA, FSB (the "Bank") and is held by the Company's wholly-owned holding company TIAA FSB Holdings, Inc ("Holdings").

As of December 31, 2018 and 2017, 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):

	2018			
SCA Entities	**Percentage of SCA Ownership**	**Gross Amount**	**Admitted Amount**	**Nonadmitted Amount**
TIAA FSB Holdings, Inc.	100%	$3,555	$3,555	$—

	2018				
SCA Entity	**Type of NAIC Filing**	**Date of Filing to the NAIC**	**NAIC Valuation Amount**	**NAIC Response Received Y/N**	**NAIC Disallowed Entities Valuation Method, Resubmission Required Y/N**
TIAA FSB Holdings, Inc.	Sub-2	5/22/2018	$3,331	Y	N

	2017			
SCA Entities	**Percentage of SCA Ownership**	**Gross Amount**	**Admitted Amount**	**Nonadmitted Amount**
TIAA FSB Holdings, Inc.	100%	$3,331	$3,331	$—

	2017				
SCA Entity	**Type of NAIC Filing**	**Date of Filing to the NAIC**	**NAIC Valuation Amount**	**NAIC Response Received Y/N**	**NAIC Disallowed Entities Valuation Method, Resubmission Required Y/N**
TIAA FSB Holdings, Inc.	Sub-1	8/24/2017	N/A	Y	N/A

The Company holds an interest in TIAA-CREF Life Insurance Company ("TIAA Life"), an insurance SCA entity, for which the audited statutory equity reflects 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 an accounting practice 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 AP&P Manual (in millions):

	2018			
	Monetary Effect on NAIC SAP		Amount of Investment	
SCA Entity	Net Income Increase (Decrease)	Surplus Increase (Decrease)	Per Audited Statutory Equity	If the Insurance SCA Had Completed Statutory Financial Statements*
TIAA-CREF Life Insurance Company	$ 1	$ 1	$ 515	$ 516

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

	2017			
	Monetary Effect on NAIC SAP		Amount of Investment	
SCA Entity	Net Income Increase (Decrease)	Surplus Increase (Decrease)	Per Audited Statutory Equity	If the Insurance SCA Had Completed Statutory Financial Statements*
TIAA-CREF Life Insurance Company	$ 2	$ —	$ 397	$ 397

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

During 2018 and 2017, 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, 2018 and 2017 of $757 million and $848 million, respectively.

As of December 31, 2018 and 2017, the net amount due to SCA entities was $457 million and $442 million, respectively. The net amounts are generally settled on a daily or monthly basis. These balances are reported in "Other liabilities." During 2017, the Company created 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 $702 million and $469 million as of December 31, 2018 and 2017, 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 to the value contained in the audited financial statements of the underlying investments and unamortized goodwill resulting from the statutory purchase method of accounting. 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 $6,741 million and $6,589 million as of December 31, 2018 and 2017, respectively. Significant holdings as of December 31, are as follows (in millions):

	2018	2017
Subsidiary	Carrying Value	Carrying Value
TIAA Global Ag Holdco LLC	$ 938	$ 979
TIAA Super Regional Mall Member Sub LLC	$ 829	$ 824
TIAA Infrastructure Investments, LLC	$ 557	$ 658
Occator Agricultural Properties, LLC	$ 470	$ 493
T-C MV Member LLC	$ 453	$ 175
T-C Europe, LP	$ 416	$ 445
T-C Lux Fund Holdings LLC	$ 363	$ 358
730 Power Development, LLC	$ 316	$ 251
TIAA-Stonepeak Investments I, LLC	$ 236	$ 312
T-C Waterford Blue Lagoon LLC	$ 195	$ 197
Infra Alpha LLC	$ 181	$ 198
TIAA Wind Investments LLC	$ 179	$ —
TIAA GTR Holdco LLC	$ 168	$ 142
TGA MKP Member LLC	$ 157	$ —
Actoil Colorado, LLC	$ 137	$ —
TGA APAC Fund Holdings, LLC	$ 119	$ 38
TIAA Oil and Gas Investments, LLC	$ 38	$ 448
T-C HV Member LLC	$ —	$ 252
Other	$ 989	$ 819
Total	$ 6,741	$ 6,589

Note 7 - Other Long-Term Investments

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

	2018	2017
Affiliated other invested assets	$ 23,348	$ 22,777
Unaffiliated other invested assets	6,968	7,007
Other invested assets	97	381
Total other long-term investments	$ 30,413	$ 30,165

As of December 31, 2018 and 2017, affiliated other invested assets consist primarily of investments through downstream legal entities in the following (in millions):

	2018	2017
Real estate	$ 6,523	$ 5,897
Operating subsidiaries and affiliates	5,370	5,213
Securities	5,325	5,053
Agriculture and timber	4,228	4,399
Energy and infrastructure	1,902	2,215
Total affiliated other invested assets	$ 23,348	$ 22,777

Of the $5,370 million and $5,213 million of operating subsidiaries and affiliates as of December 31, 2018 and 2017, $5,203 million and $5,064 million were attributed to Nuveen, LLC, TIAA's largest subsidiary, respectively.

As of December 31, 2018 and 2017, unaffiliated other invested assets consist primarily of joint venture investments, partnerships and limited liability companies.

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:

	2018	2017	2016
OTTI	$ 661	$ 454	$ 384

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

	2018	2017
Other long-term investments denominated in foreign currency	$ 1,277	$ 1,678

Note 8 - Investments Commitments

The outstanding obligation for future investments at December 31, 2018, is shown below by asset category (in millions):

	2019	In later years	Total Commitments
Bonds	$ 1,069	$ 122	$ 1,191
Stocks	36	104	140
Mortgage loans	603	—	603
Real estate	42	—	42
Other long-term investments	1,319	3,326	4,645
Total	$ 3,069	$ 3,552	$ 6,621

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):

	2018	2017	2016
Bonds	$ 8,738	$ 8,709	$ 8,879
Stocks	79	43	146
Mortgage loans	1,268	1,055	937
Real estate	238	237	222
Derivatives	160	109	57
Other long-term investments	2,712	2,242	2,239
Cash, cash equivalents and short-term investments	8	9	6
Total gross investment income	13,203	12,404	12,486
Less investment expenses	(912)	(723)	(725)
Net investment income before amortization of IMR	12,291	11,681	11,761
Plus amortization of IMR	259	194	146
Net investment income	$ 12,550	$ 11,875	$ 11,907

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):

	2018	2017	2016
Bonds	$ 129	$ 632	$ (204)
Stocks	102	(116)	16
Mortgage loans	(65)	(8)	(17)
Real estate	22	67	226
Derivatives	58	(131)	125
Other long-term investments	(649)	(470)	(358)
Cash, cash equivalents and short-term investments	18	51	(23)
Total before capital gains taxes and transfers to IMR	(385)	25	(235)
Transfers to IMR	(272)	(623)	74
Net realized capital losses less capital gains taxes, after transfers to IMR	$ (657)	$ (598)	$ (161)

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

	2018	2017	2016
Other-than-temporary impairments:			
Bonds	$ 126	$ 66	$ 90
Stocks	72	311	46
Mortgage Loans	55	—	2
Other long-term investments	661	454	384
Total	$ 914	$ 831	$ 522

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

	2018	2017	2016
Proceeds from sales	$ 6,831	$ 13,664	$ 10,436
Gross gains on sales	$ 307	$ 745	$ 243
Gross losses on sales	$ 79	$ 122	$ 321

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 quoted 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.

The following table provides information about the aggregate fair value for all financial instruments and the level within the fair value hierarchy, with no fair values approximated by net asset value ("NAV"), at December 31, 2018 (in millions):

	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3
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	20,667
Cash, cash equivalents & short term investments	597	598	117	480	—
Total	$ 262,945	$ 260,241	$ 13,769	$ 191,069	$ 58,107

	Aggregate Fair Value	Statement Value	Level 1	Level 2	Level 3
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 following table provides information about the aggregate fair value for all financial instruments and the level within the fair value hierarchy, with no fair values approximated by NAV, at December 31, 2017 (in millions):

	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3
Assets:					
Bonds	$ 197,948	$ 184,895	$ 39	$ 193,053	$ 4,856
Common stock	1,015	1,015	812	—	203
Preferred stock	406	338	43	19	344
Mortgage loans	26,742	26,597	—	—	26,742
Derivatives	291	244	—	153	138
Other invested assets	95	76	—	95	—
Contract loans	1,680	1,680	—	—	1,680
Separate account assets	37,599	37,596	12,716	4,845	20,038
Cash, cash equivalents & short term investments	641	640	280	361	—
Total	$ 266,417	$ 253,081	$ 13,890	$ 198,526	$ 54,001

	Aggregate Fair Value	Statement Value	Level 1	Level 2	Level 3
Liabilities:					
Deposit-type contracts	$ 1,062	$ 1,062	$ —	$ —	$ 1,062
Separate account liabilities	37,565	37,565	—	—	37,565
Derivatives	482	470	—	482	—
Total	$ 39,109	$ 39,097	$ —	$ 482	$ 38,627

The estimated fair values of the financial instruments presented above are determined by the Company using market information available as of December 31, 2018 and 2017. 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, cash equivalents and short term investments 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 commercial paper.

Cash, cash equivalents, and short-term investments 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 net asset value 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 Company's financial assets and liabilities measured and reported at fair value, with no fair values approximated by NAV, as of December 31, (in millions):

	2018			
	Level 1	Level 2	Level 3	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	$ 20,667	$ 37,044
Total assets at fair value	$ 13,614	$ 5,916	$ 20,966	$ 40,496
Liabilities at fair value:				
Derivatives				
Foreign exchange contracts	$ —	$ 152	$ —	$ 152
Credit default swaps	—	3	—	3
Total liabilities at fair value	$ —	$ 155	$ —	$ 155

	2017			
	Level 1	**Level 2**	**Level 3**	**Total**
Assets at fair value:				
Bonds				
U.S. Government	$ —	$ 872	$ —	$ 872
Industrial and miscellaneous	39	79	65	183
Total bonds	$ 39	$ 951	$ 65	$ 1,055
Common stock				
Industrial and miscellaneous	$ 812	$ —	$ 203	$ 1,015
Total common stocks	$ 812	$ —	$ 203	$ 1,015
Derivatives				
Interest rate contracts	$ —	$ 3	$ —	$ 3
Foreign exchange contracts	—	125	—	125
Total derivatives	$ —	$ 128	$ —	$ 128
Separate accounts assets	$ 12,706	$ 3,887	$ 20,038	$ 36,631
Total assets at fair value	$ 13,557	$ 4,966	$ 20,306	$ 38,829
Liabilities at fair value:				
Derivatives				
Foreign exchange contracts	$ —	$ 414	$ —	$ 414
Commodity forwards	—	18		18
Credit default swaps	—	14	—	14
Total liabilities at fair value	$ —	$ 446	$ —	$ 446

Transfers between Level 1 and Level 2

Periodically, the Company has transfers between Level 1 and Level 2 due to the availability of quoted prices for identical assets in active markets at the measurement date. The Company’s policy is to recognize transfers between levels as of the actual date of the event or change in circumstances that caused the transfer.

As of December 31, 2018 and 2017 the Company had no transfers between Level 1 and Level 2 of the fair value hierarchy.

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, 2018 (in millions):

	Beginning Balance at 1/1/2018	Transfers into Level 3	Transfers out of Level 3	Total gains & (losses) included in Net Income	Total gains & (losses) included in Surplus	Purchases	Issuances (Sales)	Settlements	Ending balance at 12/31/2018
Bonds	$ 65	$ 75 a	$ (38) b	(8)	$ 7	$ 1	$ (1)	$ (1)	$ 100
Common stock	203	—	(9) c	33	(3)	1,039	(1,068)	—	195
Preferred stock	—	44 d	(40) e	—	—	—	—	—	4
Separate account assets	20,038	—	—	55	451	2,214	(1,994)	(97)	20,667
Total	$ 20,306	$ 119	$ (87)	$ 80	$ 455	$ 3,254	$ (3,063)	$ (98)	$ 20,966

(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.

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, 2017 (in millions):

	Beginning Balance at 01/01/2017	Transfers into Level 3	Transfers out of Level 3	Total gains (losses) included in Net Income	Total gains (losses) included in Surplus	Purchases	Issuances (Sales)	Settlements	Ending Balance at 12/31/2017
Bonds	$ 28	$ 68 a	$ (35) b	$ (6)	$ 11	$ —	$ —	$ (1)	$ 65
Common stock	523	—	(22) c	85	(54)	414	(739)	(4)	203
Separate account assets	19,468	—	—	(10)	327	1,087	(570)	(264)	20,038
Total	$ 20,019	$ 68	$ (57)	$ 69	$ 284	$ 1,501	$ (1,309)	$ (269)	$ 20,306

(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.

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, 2018 (in millions):

Financial Instrument	Fair Value	Valuation Techniques	Significant Unobservable Inputs	Range of Inputs	Weighted Average
Fixed maturity securities:					
RMBS	$ 2	Discounted cash Flow	Discount rate	7.2% - 8.5%	8.4%
		Market comparable	Credit analysis/market comparable	$92.50	$92.50
ABS	$ 98	Discounted cash Flow	Discount rate	9.0 % - 14.8%	12.1 %
Equity securities:					
Common stock	$ 195	Market comparable	EBITDA multiple	7.7x - 14.0x	11.3x
		Equity method	Book value multiple	1.0x	1.0x
		Market comparable	Credit analysis/market comparable	$0.34 -$1,000.00	$376.36
Preferred stock	$ 4	Market comparable	EBITDA multiple	12.0x	12.0x
Separate account assets:	$ 22,357				
Real estate properties and real estate joint ventures					
Office properties		Income approach - discounted cash flow	Discount rate	5.5% - 8.6%	6.5%
			Terminal capitalization rate	4.0% - 7.5%	5.4%
		Income approach - direct capitalization	Overall capitalization rate	4.0% - 7.0%	4.8%
Industrial properties		Income approach - discounted cash flow	Discount rate	5.3% - 8.9%	6.8%
			Terminal capitalization rate	4.4% - 7.3%	5.5%
		Income approach - direct capitalization	Overall capitalization rate	4.0% - 7.0%	4.9%
Residential properties		Income approach - discounted cash flow	Discount rate	5.5% - 7.8%	6.5%
			Terminal capitalization rate	3.8% - 6.8%	5.0%
		Income approach - direct capitalization	Overall capitalization rate	3.3% - 6.0%	4.5%
Retail properties		Income approach - discounted cash flow	Discount rate	5.0% - 10.7%	6.4%
			Terminal capitalization rate	4.3% - 9.0%	5.3%
		Income approach - direct capitalization	Overall capitalization rate	3.3% - 8.5%	4.7%

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

Financial Instrument	Fair Value	Valuation Techniques	Significant Unobservable Inputs	Range of Inputs	Weighted Average
Mortgage loans payable	$ (2,603)				
Office and industrial properties		Discounted cash flow	Loan to value ratio	36.4% - 67.8%	47.6%
			Equivalency rate	3.9% - 6.2%	4.6%
		Net present value	Loan to value ratio	36.4% - 67.8%	47.6%
			Weighted average cost of capital risk premium multiple	1.2 - 1.4	1.3
Residential properties		Discounted cash flow	Loan to value ratio	31.9% - 63.6%	48.1%
			Equivalency rate	3.4% - 4.6%	4.1%
		Net present value	Loan to value ratio	31.9% - 63.6%	48.1%
			Weighted average cost of capital risk premium multiple	1.1 - 1.4	1.2
Retail properties		Discounted cash flow	Loan to value ratio	31.9% - 55.3%	39.3%
			Equivalency rate	4.3% - 5.3%	4.5%
		Net present value	Loan to value ratio	31.9% - 55.3%	39.3%
			Weighted average cost of capital risk premium multiple	1.1 - 1.3	1.2

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	$ 913				
Office, retail and storage properties		Discounted cash flow	Loan to value ratio	70.8% - 79.2%	75.6%
			Equivalency rate	6.0% - 8.3%	6.9%

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 net asset value 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):

	2018										
	1	2	3	4	5	6	7	8	9	10	11
Restricted Asset Category	**Total General Account (G/A)**	**G/A Supporting (S/A) Activity**	**Total Separate Account (S/A) Restricted Assets**	**S/A Assets Supporting G/A Activity**	**Total (1 plus 3)**	**Total From Prior Year**	**Increase / (Decrease) (5 minus 6)**	**Total Non admitted Restricted**	**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	0.32%	0.32%

	2017										
	1	2	3	4	5	6	7	8	9	10	11
Restricted Asset Category	Total General Account (G/A)	G/A Supporting (S/A) Activity	Total Separate Account (S/A) Restricted Assets	S/A Assets Supporting G/A Activity	Total (1 plus 3)	Total From Prior Year	Increase / (Decrease) (5 minus 6)	Total Non admitted Restricted	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	$ 706	$ —	$ 26	$ —	$ 732	$ 753	$ (21)	$ —	$ 732	0.24%	0.25%
FHLB capital stock	81	—	—	—	81	101	(20)	—	81	0.03%	0.03%
On deposit with states	18	—	—	—	18	18	0	—	18	0.01%	0.01%
Pledged as collateral not captured in other categories	332	—	—	—	332	79	253	—	332	0.11%	0.11%
Other restricted assets	—	—	42	—	42	46	(4)	—	42	0.01%	0.01%
Total restricted assets	$ 1,137	$ —	$ 68	$ —	$ 1,205	$ 997	$ 208	$ —	$ 1,205	0.40%	0.41%

The pledged as collateral not captured in other categories represents derivative collateral the Company has pledged, and collateral pledged for Regulation W requirements 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):

	2018			
Collateral Assets	**Book/Adjusted Carrying Value (BACV)**	**Fair Value**	**BACV to Total G/A Assets (Admitted and Nonadmitted)**	**BACV to Total G/A Admitted Assets**
Cash, cash equivalents and short-term investments	$ 756	$ 756	0.28 %	0.29 %
Securities lending collateral assets	562	562	0.21 %	0.21 %
Total collateral assets	$ 1,318	$ 1,318	0.49 %	0.50 %

	2018	
	Amount	**% of Liability to Total G/A Liabilities**
Recognized obligation to return collateral assets	$ 1,318	0.58%

	2017			
Collateral Assets	Book/Adjusted Carrying Value (BACV)	Fair Value	BACV to Total G/A Assets (Admitted and Nonadmitted)	BACV to Total G/A Admitted Assets
Cash, cash equivalents and short-term investments	$ 34	$ 34	0.01%	0.01%
Securities lending collateral assets	706	706	0.27%	0.27%
Total collateral assets	$ 740	$ 740	0.28%	0.28%

	2017	
	Amount	% of Liability to Total G/A Liabilities
Recognized obligation to return collateral assets	$ 740	0.33%

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, income generation, 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, 2018, counterparties pledged $800 million 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, 2018, the Company pledged the following collateral and margin to its counterparties, (in millions):

Cash collateral and margin	$ 11
Securities collateral and margin	$ 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, 2018, is $1,042 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, 2018 is $9 million for which the Company posted collateral of $9 million in the normal course of business.

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

Commodity Forward Contracts: The Company enters into crude oil forward contracts to hedge against the effect of fluctuations in crude oil prices on certain equity investments. This type of derivative instrument is traded OTC-bilateral and the Company is exposed to both market and counterparty risk. The Company applies fair value 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. This type of derivative instrument is traded OTC-bilateral, and the Company is exposed to both market and counterparty risk. The Company applies hedge accounting to certain of these derivatives instruments, and fair value accounting to those instruments that do not qualify for hedge accounting.

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. This type of derivative instrument is traded OTC-bilateral, and the Company is exposed to both market and counterparty risk. The changes in the carrying value of foreign currency exchange rates are recognized as unrealized gains or losses. The Company applies fair value accounting for these derivatives instruments.

Interest Rate Swap Contracts: The Company enters into interest rate swap contracts to hedge against the effect of interest rate fluctuations on certain variable interest rate bonds. These contracts allow the Company to lock in a fixed interest rate and to mitigate the risk of fluctuating interest rates. This type of derivative instrument may be traded OTC-cleared or OTC-bilateral, and the Company is exposed to both market and counterparty risk. Generally, no cash is exchanged at the outset of the contract and no principal payments are made by either party. These transactions provide for a single net payment to be made by one counterparty at each due date. The Company applies fair value accounting for these derivatives instruments.

Asset Swaps: The Company enters into asset swap contracts to hedge against interest rate risk associated with its U.S. Treasury Inflation Protected Securities (TIPS). The Company also uses asset swap contracts in certain replication transactions. 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. This type of derivative instrument is traded OTC-bilateral, and the Company is exposed to both market and counterparty risk. The Company applies hedge accounting for asset swaps used in hedging transactions.

Total Return Swaps: The Company enters into total return swap contracts to exchange a cash flow based on a fixed or variable rate in return for the total economic exposure of an underlying asset, which includes cash flows, credit risk and market risk, or vice versa. This type of derivative instrument is traded OTC-bilateral, and is exposed to both market and counterparty risk. These derivative instruments may be held in hedging relationships or in replication transactions.

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. This type of derivative is traded OTC-bilateral and is exposed to market and counterparty risk. The Company applies fair value accounting for these derivatives instruments.

Written Credit Default Swaps used in Replication Transactions: A replication synthetic asset transaction is a derivative transaction (the derivative component) established concurrently with another fixed income instrument (the cash component) in order to replicate the investment characteristics of another instrument (the reference entity). As part of a strategy to replicate desired credit exposure in conjunction with high-rated host securities, the Company

writes credit default swaps on either single name corporate or sovereign credits, credit indices, or credit index tranches and provides credit default protection to the buyer. This type of derivative instrument may be traded OTC-bilateral or OTC-cleared, and the Company is exposed to market, credit and counterparty risk.

The table below illustrates the effect of unrealized and realized gains and losses from derivative instruments in the Statements of Operations. 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):

	December 31, 2018		December 31, 2017	
	Unrealized Gain (Loss) Recognized in Surplus	Gain (Loss) Recognized in Net Realized Capital Gain (Loss)	Unrealized Gain (Loss) Recognized in Surplus	Gain (Loss) Recognized in Net Realized Capital Gain (Loss)
Qualifying hedge relationships				
Foreign currency swap contract	$ 19	$ (2)	$ (21)	$ 6
Total qualifying hedge relationships	19	(2)	(21)	6
Non-qualifying hedge relationships				
Commodity forwards	18	(24)	(18)	(40)
Foreign currency swaps	493	15	(544)	31
Foreign currency forwards	115	47	(161)	(132)
Interest rate contracts	1	—	(1)	—
Purchased credit default swaps	4	(1)	5	—
Total non-qualifying hedge relationships	$ 631	$ 37	$ (719)	$ (141)
Derivatives used for other than hedging purposes	—	23	—	5
Total derivatives	$ 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, 2018, 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 Dow Jones North American Investment Grade Index Series 26 and 27 (DJ.NA.IG.26 and DJ.NA.IG.27, respectively), whereby the Company is obligated to perform should there be a default on any reference entity in the index.

The Company writes contracts on the “Senior” tranche of the Dow Jones North American Investment Grade Index Series 25, 27, 29, and 31 (DJ.NA.IG.25, DJ.NA.IG.27, DJ.NA.IG.29 and DJ.NA.IG.31, 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):

		December 31, 2018			December 31, 2017		
RSAT NAIC Designation	Referenced Credit Obligation	CDS Notional Amount	CDS Estimated Fair Value	Weighted Average Years to Maturity	CDS Notional Amount	CDS Estimated Fair Value	Weighted Average Years to Maturity
1 Highest quality	Single name credit default swaps	$ —	$ —	—	$ 5	$ —	1
	Credit default swaps on indices	8,797	413	4	5,967	185	4
	Subtotal	8,797	413	4	5,972	185	4
2 High quality	Single name credit default swaps	5	—	3	25	—	1
	Credit default swaps on indices	—	—	—	450	10	3
	Subtotal	5	—	3	475	10	3
3 Medium quality	Single name credit default swaps	—	—	—	10	—	1
	Credit default swaps on indices	—	—	—	—	—	—
	Subtotal	—	—	—	10	—	1
	Total	$ 8,802	$ 413	—	$ 6,457	$ 195	4

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.

Summary of Derivative Positions

(in millions)

	December 31, 2018			December 31, 2017		
	Notional	Carrying Value	Estimated FV	Notional	Carrying Value	Estimated FV
Qualifying hedge relationships						
Asset swaps						
Assets	$ 1,210	$ —	$ 39	$ 810	$ —	$ (36)
Liabilities	—	—	—	—	—	—
Foreign currency swap contracts						
Assets	124	6	2	37	3	4
Liabilities	60	(9)	(12)	158	(24)	(36)
Total qualifying hedge relationships	$ 1,394	$ (3)	$ 29	$ 1,005	$ (21)	$ (68)
Non-qualifying hedge relationships						
Commodity forwards						
Assets	$ —	$ —	$ —	$ —	$ —	$ —
Liabilities	—	—	—	115	(18)	(18)
Interest rate contracts						
Assets	116	4	4	66	3	3
Liabilities	—	—	—	—	—	—
Foreign currency swaps						
Assets	4,729	424	424	1,980	123	123
Liabilities	2,200	(148)	(148)	3,449	(341)	(341)
Foreign currency forwards						
Assets	1,676	48	48	129	2	2
Liabilities	521	(4)	(4)	2,453	(73)	(73)
Purchased credit default swaps						
Assets	3	—	—	—	—	—
Liabilities	301	(3)	(3)	521	(14)	(14)
Total non-qualifying hedge relationships	$ 9,546	$ 321	$ 321	$ 8,713	$ (318)	$ (318)
Derivatives used for other than hedging purposes						
Written credit default swaps						
Assets	$ 8,797	$ 486	$ 413	$ 6,417	$ 113	$ 195
Liabilities	5	—	—	40	—	—
Asset swaps and total return swaps						
Assets	10	—	—	35	—	—
Liabilities	—	—	—	—	—	—
Total derivatives used for other than hedging purposes	$ 8,812	$ 486	$ 413	$ 6,492	$ 113	$ 195
Total derivatives	$ 19,752	$ 804	$ 763	$ 16,210	$ (226)	$ (191)

For the year ended December 31, 2018, the average fair value of derivatives used for other than hedging purposes, was $239 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	2018	2017
TIAA Real Estate Account	$ 26,180	$ 25,175
TIAA Separate Account VA-3	9,935	10,381
TIAA Separate Account VA-1	928	1,075
TIAA Stable Value	1,245	965
Total	$ 38,288	$ 37,596

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):

	2018			
	Non-indexed Guarantee less than/ equal to 4%	Non-indexed Guarantee more than 4%	Non-guaranteed Separate Accounts	Total
Premiums, considerations or deposits	$ 459	$ —	$ 4,376	$ 4,835
Reserves				
For accounts with assets at:				
Fair value	$ —	$ —	$ 36,703	$ 36,703
Amortized cost	1,205	—	—	1,205
Total reserves	$ 1,205	$ —	$ 36,703	$ 37,908
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
At fair value	—	—	36,703	36,703
Total reserves	$ 1,205	$ —	$ 36,703	$ 37,908

*Withdrawable at book value without adjustment or charge.

	2017			
	Non-indexed Guarantee less than/ equal to 4%	Non-indexed Guarantee more than 4%	Non-guaranteed Separate Accounts	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.

	2016			
	Non-indexed Guarantee less than/ equal to 4%	Non-indexed Guarantee more than 4%	Non-guaranteed Separate Accounts	Total
Premiums, considerations or deposits	$ 280	$ —	$ 4,491	$ 4,771
Reserves				
For accounts with assets at:				
Fair value	$ —	$ —	$ 32,811	$ 32,811
Amortized cost	614	—	—	614
Total reserves	$ 614	$ —	$ 32,811	$ 33,425
By withdrawal characteristics:				
Subject to discretionary withdrawal:				
At book value without market value adjustment and with current surrender charge of 5% or less*	$ 614	$ —	$ —	$ 614
At fair value	—	—	32,811	32,811
Total reserves	$ 614	$ —	$ 32,811	$ 33,425

*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):

	2018	2017	2016
Transfers reported in the Summary of Operations of the separate accounts statement:			
Transfers to separate accounts	$ 5,124	$ 5,296	$ 5,092
Transfers from separate accounts	(4,682)	(4,173)	(3,241)
Reconciling adjustments:			
Fund transfer exchange gain (loss)	—	—	—
Transfers reported in the Summary of Operations of the Life, Accident & Health Annual Statement	$ 442	$ 1,123	$ 1,851

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, 2018	December 31, 2017
Deferred and payout annuity contracts issued after 2000	4,160	4,159

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, 2018 and 2017, the Company had $320 million and $364 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 annuity actuarial reserves and deposit-type contract funds for the years ended December 31, are as follows (in millions):

	2018				
	General Account	Separate Account with Guarantees	Separate Account Nonguaranteed	Total	% of Total
Subject to discretionary withdrawal:					
At fair value	$ —	$ —	$ 36,703	$ 36,703	14.7%
At book value without adjustment (minimal or no charge or adjustment)	58,671	1,205	—	59,876	24.0%
Not subject to discretionary withdrawal	153,247	—	—	153,247	61.3%
Total (gross)	$ 211,918	$ 1,205	$ 36,703	$ 249,826	100.0%
Reinsurance ceded	—	—	—	—	
Total (net)	$ 211,918	$ 1,205	$ 36,703	$ 249,826	

	2017				
	General Account	Separate Account with Guarantees	Separate Account Nonguaranteed	Total	% of Total
Subject to discretionary withdrawal:					
At fair value	$ —	$ —	$ 36,388	$ 36,388	14.9%
At book value without adjustment (minimal or no charge or adjustment)	56,466	932	—	57,398	23.5%
Not subject to discretionary withdrawal	150,005	—	—	150,005	61.6%
Total (gross)	$ 206,471	$ 932	$ 36,388	$ 243,791	100.0%
Reinsurance ceded	—	—	—	—	
Total (net)	$ 206,471	$ 932	$ 36,388	$ 243,791	

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 and VA-1. Additionally, effective December 26, 2016, the Company entered into a General Service and Facilities Agreements with its wholly-owned subsidiary, Nuveen, LLC, for the Company to provide and receive general services at cost inclusive of charges for overhead.

The Company allocated expenses of $2,459 million, $2,252 million and $2,080 million to its various subsidiaries and affiliates for the years ended December 31, 2018, 2017 and 2016, respectively. These allocated expenses are not included in the Company's net operating expenses. The expense allocation process determines the portion of the total investment and operating expenses attributable to each legal entity and each line of business within an entity. Every month the Company allocates incurred expenses to each line of business and its affiliates. As part of this allocation process, every department with personnel and every vendor related expense is allocated to lines of business 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 line of business and legal entity.

Activities necessary for the operation of the College Retirement Equities Fund (“CREF”), a companion organization, are provided at-cost by the Company and two of its subsidiaries. Such services are provided in accordance with an Investment Management Services Agreement, updated and amended annually as of May 1, between CREF and TIAA-CREF Investment Management, LLC (“Investment Management”), and in accordance with a Principal Underwriting and Distribution Services Agreement for CREF, updated and amended annually as of May 1, between CREF and TIAA-CREF Individual and Institutional Services, LLC (“Services”). The Company also performs administrative services for CREF, on an at-cost basis in accordance with an Administrative Service Agreement, updated and amended annually as of May 1. The management fees collected under these agreements and the equivalent allocated expenses, which amounted to approximately $731 million, $808 million, and $860 million for the years ended December 31, 2018, 2017 and 2016, respectively, are not included in the statement of operations and have no effect on the Company's operations.

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. Teachers Personal Investors Services, Inc. (“TPIS”) and 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 TIAA’s wholly-owned subsidiary 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 $219 million and $203 million to Advisors and Nuveen Alternatives Advisers, LLC, respectively, for the year ended December 31, 2018.

January 1, 2018, the Company entered into an Omnibus Service Agreement with its wholly-owned subsidiary 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 year ended December 31, 2018.

All services necessary for the operation of REA are provided at-cost by the Company and Services. The Company provides investment management and administrative services for REA. Distribution services for REA are provided in accordance with a Distribution Agreement among Services, the Company and REA. The Company and Services receive fee payments from REA on a daily basis according to formulae established annually and adjusted periodically. The daily fee is based on an estimate of the at-cost expenses necessary to operate 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 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.

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

The Bank services certain residential mortgage loans held by the Company. As of December 31, 2018 and 2017, the Company held $825 million and $907 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 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, 2018 or December 31, 2017.

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

	12/31/2018			12/31/2017			Change		
	(1) Ordinary	(2) Capital	(3) (Col 1+2) Total	(4) Ordinary	(5) Capital	(6) (Col 4+5) Total	(7) (Col 1–4) Ordinary	(8) (Col 2–5) Capital	(9) (Col 7+8) Total
a) Gross Deferred Tax Assets	$ 6,115	$ 391	$ 6,506	$ 6,586	$ 205	$ 6,791	$ (471)	$ 186	$ (285)
b) Statutory Valuation Allowance Adjustments	—	—	—	—	—	—	—	—	—
c) Adjusted Gross Deferred Tax Assets (a–b)	6,115	391	6,506	6,586	205	6,791	(471)	186	(285)
d) Deferred Tax Assets Non-admitted	3,135	—	3,135	3,720	—	3,720	(585)	—	(585)
e) Subtotal Net Admitted Deferred Tax Asset (c-d)	2,980	391	3,371	2,866	205	3,071	114	186	300
f) Deferred Tax Liabilities	499	470	969	413	694	1,107	86	(224)	(138)
g) Net Admitted Deferred Tax Assets/(Net Deferred Tax Liability) (e–f)	$ 2,481	$ (79)	$ 2,402	$ 2,453	$ (489)	$ 1,964	$ 28	$ 410	$ 438

Admission Calculation Components SSAP No. 101	12/31/2018			12/31/2017			Change		
	(1) Ordinary	(2) Capital	(3) (Col 1+2) Total	(4) Ordinary	(5) Capital	(6) (Col 4+5) Total	(7) (Col 1–4) Ordinary	(8) (Col 2–5) Capital	(9) (Col 7+8) 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)	2,365	37	2,402	1,921	43	1,964	444	(6)	438
1. Adjusted Gross DTA Expected to be Realized Following the Balance Sheet Date	2,365	37	2,402	1,921	43	1,964	444	(6)	438
2. Adjusted Gross DTA Allowed per Limitation Threshold	XXX	XXX	5,355	XXX	XXX	5,151	XXX	XXX	204
c) Adjusted Gross DTA (Excluding The Amount Of DTA From (a) and (b) above) Offset by Gross DTL	615	354	969	945	162	1,107	(330)	192	(138)
d) DTA Admitted as the result of application of SSAP No. 101. Total ((a)+(b)+(c))	$ 2,980	$ 391	$ 3,371	$ 2,866	$ 205	$ 3,071	$ 114	$ 186	$ 300

	2018	2017
Ratio percentage used to determine recovery period and threshold limitation amount	828%	812%
Amount of adjusted capital and surplus used to determine the threshold limitation in (b)2 above (in millions)	$35,697	$34,340

Impact of Tax Planning Strategies: (in millions)	12/31/2018		12/31/2017		Change	
	(1) Ordinary	(2) Capital	(3) Ordinary	(4) Capital	(5) (Col 1–3) Ordinary	(6) (Col 2–4) Capital
Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage						
Adjusted Gross DTAs Amount From Above	$ 6,115	$ 391	$ 6,586	$ 205	$ (471)	$ 186
Percentage Of Adjusted Gross DTAs By Tax Character Attributable To The Impact Of Tax Planning Strategies	—%	—%	—%	—%	— %	—%
Net Admitted Adjusted Gross DTAs Amount From Above	$ 2,980	$ 391	$ 2,866	$ 205	$ 114	$ 186
Percentage Of Net Admitted Adjusted Gross DTAs By Tax Character Admitted Because Of The Impact Of Tax Planning Strategies	—%	—%	7.33%	—%	(7.33)%	—%

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):

	12/31/2018	12/31/2017	12/31/2016
Current Income Tax:			
Federal income tax expense (benefit)	$ (330)	$ (698)	$ (484)
Foreign taxes	—	—	—
Subtotal	$ (330)	$ (698)	$ (484)
Federal income taxes expense on net capital gains	431	619	1,089
Generation/(utilization) of loss carry-forwards	(101)	79	(605)
Intercompany tax sharing expense/(benefit)	(6)	11	17
Other	(17)	(15)	(1)
Federal and foreign income tax expense / (benefit)	$ (23)	$ (4)	$ 16

	12/31/2018	12/31/2017	Change
Deferred Tax Assets:			
Ordinary:			
Policyholder reserves	$ 572	$ 543	$ 29
Investments	726	772	(46)
Policyholder dividends accrual	395	395	—
Fixed assets	188	257	(69)
Compensation and benefits accrual	174	168	6
Net operating loss carry-forward	661	816	(155)
Other (including items < 5% of total ordinary tax assets)	510	560	(50)
Intangible assets – business in force and software	2,889	3,075	(186)
Subtotal	$ 6,115	$ 6,586	$ (471)
Statutory valuation allowance adjustment	$ —	$ —	$ —
Non-admitted	3,135	3,720	(585)
Admitted ordinary deferred tax assets	$ 2,980	$ 2,866	$ 114
Capital:			
Investments	$ 371	$ 186	$ 185
Real estate	20	19	1
Subtotal	$ 391	$ 205	$ 186
Statutory valuation allowance adjustment	—	—	—
Non-admitted	—	—	—
Admitted capital deferred tax assets	391	205	186
Admitted deferred tax assets	$ 3,371	$ 3,071	$ 300

	12/31/2018	12/31/2017	Change
Deferred Tax Liabilities:			
Ordinary:			
Investments	$ 138	$ —	$ 138
Reserves transition adjustment	359	410	(51)
Other (including items < 5% of total ordinary tax liabilities)	2	3	(1)
Subtotal	$ 499	$ 413	$ 86
Capital:			
Investments	470	694	(224)
Subtotal	$ 470	$ 694	$ (224)
Deferred tax liabilities	$ 969	$ 1,107	$ (138)
Net Deferred Tax:			
Assets/Liabilities	$ 2,402	$ 1,964	$ 438

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, 2018 are as follows (in millions):

Description	Tax Effect	Effective Tax Rate
Provision computed at statutory rate	$ 357	21.00 %
Dividends received deduction	(50)	(2.96)%
Amortization of interest maintenance reserve	(54)	(3.20)%
Statutory impairment of affiliated common stock	9	0.55 %
Tax effect of change in net unrealized capital gains & losses	(153)	(8.99)%
Other	15	0.90 %
Total statutory income taxes	$ 124	7.30 %
Federal and foreign income tax incurred (benefit) expense	$ (23)	(1.35)%
Change in net deferred income tax charge (benefit)	147	8.65 %
Total statutory income taxes	$ 124	7.30 %

At December 31, 2018, the Company has net operating loss carry forwards with expiration dates through the year 2032 (in millions):

Year Incurred	Operating Loss	Year of Expiration
2008	$ 634	2023
2012	1,268	2027
2014	279	2029
2015	807	2030
2016	1	2031
2017	159	2032
Total	$ 3,148	

As of December 31, 2018, the Company had no foreign tax credit carry forwards.

At December 31, 2018, and 2017, the Company has no capital loss carry forwards.

At December 31, 2018, the Company has general business credits of $32 million generated during the years 2004 to 2017 and expiring between 2024 to 2037.

Due to the Tax Cuts and Jobs Act, carryback of NOL's generated after December 31, 2017 are disallowed. Consequentially, ordinary income tax paid in years 2017 and prior may not be recouped in the event of future net losses.

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) Covariance Capital Management, Inc.
5) CustomerOne Financial Network, Inc.
6) Elite Lender Services, Inc.
7) TIAA Commercial Finance, Inc f/k/a EverBank Commercial Finance, Inc.
8) EverBank Wealth Management, Inc.
9) EverTrade Direct Brokerage, Inc.
10) GreenWood Resources, Inc.
11) JWL Properties, Inc.
12) MyVest Corporation
13) ND Properties, Inc.
14) NIS/R&T, Inc. f/k/a Nuveen Investment Solutions, Inc.*
15) Nuveen Holdings, Inc.*
16) Nuveen Holdings I, Inc. *
17) Nuveen Investments, Inc.*
18) Nuveen Investments Holdings, Inc.*
19) Nuveen Securities, LLC*
20) Oleum Holding Company, Inc.
21) T-C Europe Holdings, Inc.
22) T-C SP, Inc.
23) T-Investment Properties Corp.
24) TCT Holdings, Inc.
25) Teachers Personal Investors Services, Inc.
26) Terra Land Company
27) TIAA-CREF Life Insurance Company
28) TIAA Board of Overseers
29) TIAA-CREF Tuition Financing, Inc.
30) TIAA FSB Holdings, Inc.
31) TIAA, FSB fka Everbank
32) Tygris Asset Finance, Inc.
33) Tygris Commercial Finance Group, Inc.
34) Westchester Group Asset Management, Inc.
35) Westchester Group Farm Management, Inc.
36) Westchester Group Investment Management Holding Company, Inc.
37) Westchester Group Investment Management, Inc.
38) 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 ($45) million and ($17) million at December 31, 2018 and 2017, respectively.

The Company’s tax years 2014 through 2018 are open to examination by the IRS.

The 2017 Tax Cuts and Jobs Act (the “Act”) reduces the U.S. corporate tax rate from 35% to 21%, includes several base broadening provisions, and reforms the US international tax system. With a few exceptions, key provisions were effective for tax years beginning January 1, 2018.

The Company's DTAs and DTLs as of December 31, 2017 reflect the enacted tax rate of 21% which is expected to apply when the DTAs and DTLs will be settled or realized. The Company's federal income tax incurred for the year ended December 31, 2018 is computed using the enacted tax rate of 21%.

In February 2018, INT 18-01: Updated Tax Estimates under the Tax Cuts and Jobs Act was issued to address the application of statutory accounting principles when a reporting entity does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act.

As of December 31, 2017, the Company noted that the impact of the Act to DTA admissibility under SSAP 101 was under evaluation. Our net admitted DTA as of December 31, 2017 was computed based on reasonable estimates and guidance available as of the date of this filing.

Additionally, in evaluating the impact of reform to the US international tax system, the Company had estimated that no material liability would be due for the repatriation transition tax provided in the Act.

As of the close of the measurement period allowed under INT 18-01 (one year from the date of the Act), no significant changes in reasonable estimates reported in December 31, 2017 have occurred.

Note 17 – Pension Plan and Post-retirement Benefits

The Company maintains a qualified, non-contributory defined contribution money purchase plan covering substantially all employees. 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 $53 million, $58 million and $55 million for the years ended December 31, 2018, 2017 and 2016, 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):

	SERP		
	2018	2017	2016
Benefit obligation	$ 37	$ 41	$ 42
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):

	Post-retirement Benefits		
	2018	2017	2016
Benefit obligation	$ 74	$ 102	$ 94
Net period benefit cost	$ 2	$ 1	$ 2

Note 18 – Reinsurance

Reinsurance transactions included in the statutory basis statements of operations “Insurance and annuity premiums and other considerations” are as follows (in millions):

	Years Ended December 31,		
	2018	2017	2016
Direct premiums	$ 16,233	$ 16,657	$ 16,608
Ceded premiums	(13)	(13)	(14)
Net premiums	$ 16,220	$ 16,644	$ 16,594

The Company enters into reinsurance agreements in the normal course of its insurance business to reduce overall risk. The Company remains liable for reinsurance ceded if the reinsurer fails to meet its obligation on the business assumed. All reinsurance is placed with unaffiliated reinsurers. A liability is established for reserves ceded to unauthorized reinsurers which are not secured by or in excess of letters of credit or trust agreements. The Company does not have reinsurance agreements in effect under which the reinsurer may unilaterally cancel the agreement. Amounts shown in the financial statements are reported net of the impact of reinsurance.

Note 19 - 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, 2018 and 2017, 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, 2018 and 2017 that resulted in default.

As of December 31, 2018 and 2017, 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, 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 is cash and has not been sold or re-pledged as of December 31, 2018.

Of the cash collateral received from the program, $392 million is held as cash as of December 31, 2018, with the remaining $170 million invested in overnight Treasury reverse repurchase agreements. 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):

	Amortized Cost	Fair Value
Open	$ 392	$ 392
30 Days or less	170	170
Total collateral reinvested	$ 562	$ 562

As of December 31, 2017 the estimated fair value of the Company's securities on loan under the program was $689 million. The estimated fair value of collateral held by the Company for the bonds on loan as of December 31, 2017, was reported in "Securities lending collateral assets" with an offsetting collateral liability of $706 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, 2017.

Of the cash collateral received from the program, $516 million was held as cash as of December 31, 2017, with the remaining $190 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):

	Amortized Cost	Fair Value
Open	$ 516	$ 516
30 Days or less	190	190
Total collateral reinvested	$ 706	$ 706

Note 20 - 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, and can also be a source of contingent liquidity to meet other requirements. 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 $15,164 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):

	2018			2017		
	Total	General Account	Separate Account	Total	General Account	Separate Account
Membership stock - class A	$ —	$ —	$ —	$ —	$ —	$ —
Membership stock - class B	82	82	—	81	81	—
Activity stock	—	—	—	—	—	—
Excess stock	—	—	—	—	—	—
Total	$ 82	$ 82	$ —	$ 81	$ 81	$ —

Membership stock at December 31, 2018 and 2017, is not eligible for redemption.

The Company did not have any borrowings outstanding as of December 31, 2018 or 2017. Therefore, no collateral was pledged by the Company to the FHLBNY as of either year end.

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

	2018			2017		
	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
General account	$ 1,390	$ 1,359	$ 1,300	$ 670	$ 620	$ 615
Separate account	—	—	—	—	—	—
Total	$ 1,390	$ 1,359	$ 1,300	$ 670	$ 620	$ 615

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

	2018			2017		
	Total	General Account	Separate Account	Total	General Account	Separate Account
Debt	$ 1,300	$ 1,300	$ —	$ 615	$ 615	$ —
Funding agreements	—	—	—	—	—	—
Other	—	—	—	—	—	—
Total	$ 1,300	$ 1,300	$ —	$ 615	$ 615	$ —

Note 21 – 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):

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

As of December 31, 2018 and 2017, the portion of contingency reserves represented by cumulative net unrealized gains was $2,498 million and $2,857 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, 2018 (in millions):

Date Issued	Interest Rate	Par Value (Face Amount of Notes)	Carrying Value of Note	Interest 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	$ 647	12/16/2039
09/18/2014	4.900%	1,650	1,649	81	323	09/15/2044
09/18/2014	4.375% *	350	349	15	61	09/15/2054
05/08/2017	4.270%	2,000	1,994	85	130	05/15/2047
Total		$ 5,050	$ 5,041	$ 253	$ 1,161	

*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 22 – Contingencies and Guarantees

Subsidiary and Affiliate Guarantees:

At December 31, 2018, 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, 2018, 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, 2018.

The Company has agreed that it will cause TIAA Life, a direct wholly owned subsidiary, 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, 2018, is $1,401 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, are not made by Nuveen Finance. Nuveen Finance paid $112 million and $169 million of the liability during 2018 and 2017, 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-CREF Life. $30 million of this facility is maintained on a committed basis with an expiration date of July 8, 2019. As of December 31, 2018, 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, 2018, 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 $1,250 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 TIAA, FSB. This line has an expiration date of September 11, 2019. As of December 31, 2018, 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 29, 2019. As of December 31, 2018, there were no balances outstanding.

The Company also provides a $23 million committed line of credit to TIAA Charitable Inc. This line has an expiration date of June 28, 2047. As of December 31, 2018, there was an outstanding balance of $15 million.

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, 2018, 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 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 23– Subsequent Events

In preparing these financial statements, the Company has evaluated events and transactions for potential recognition or disclosure through March 14, 2019, the date the financial statements were available to be issued.