

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549
FORM 10-K

Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2016

Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Commission file number 1-11848

REINSURANCE GROUP OF AMERICA, INCORPORATED

(Exact name of registrant as specified in its charter)

Missouri

(State or other jurisdiction
of incorporation or organization)

43-1627032

(I.R.S. Employer
Identification No.)

16600 Swingley Ridge Road, Chesterfield, Missouri

(Address of principal executive offices)

63017

(Zip Code)

Registrant's telephone number, including area code: **(636) 736-7000**

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$0.01	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company

Indicate by check mark whether the registrant is a shell company. Yes No

The aggregate market value of the stock held by non-affiliates of the registrant, based upon the closing sale price of the common stock on June 30, 2016, as reported on the New York Stock Exchange was approximately \$6.2 billion.

As of January 31, 2017, 64,334,902 shares of the registrant's common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Form 10-K incorporates by reference certain information from the Registrant's Definitive Proxy Statement for the Annual Meeting of Shareholders ("the Proxy Statement") to be held May 23, 2017, to be filed by the Registrant with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the year ended December 31, 2016.

REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES
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Item 1. BUSINESS

A. Overview

Reinsurance Group of America, Incorporated (“RGA”) is an insurance holding company that was formed on December 31, 1992. The consolidated financial statements herein include the assets, liabilities, and results of operations of RGA and its subsidiaries, all of which are wholly owned (collectively, the “Company”).

The Company is a leading global provider of traditional life and health reinsurance and financial solutions with operations in the U.S., Latin America, Canada, Europe, Africa, Asia and Australia. Reinsurance is an arrangement under which an insurance company, the “reinsurer,” agrees to indemnify another insurance company, the “ceding company,” for all or a portion of the insurance and/or investment risks underwritten by the ceding company. Reinsurance is designed to (i) reduce the net amount at risk on individual risks, thereby enabling the ceding company to increase the volume of business it can underwrite, as well as increase the maximum risk it can underwrite on a single risk; (ii) stabilize operating results by leveling fluctuations in the ceding company’s loss experience; (iii) assist the ceding company in meeting applicable regulatory requirements; and (iv) enhance the ceding company’s financial strength and surplus position.

The Company has geographic-based and business-based operational segments: U.S. and Latin America; Canada; Europe, Middle East and Africa; Asia Pacific; and Corporate and Other. Geographic-based operations are further segmented into traditional and financial solutions businesses. The Company’s segments primarily write reinsurance business that is wholly or partially retained in one or more of RGA’s reinsurance subsidiaries. See “Segments” for more information concerning the Company’s operating segments.

Traditional Reinsurance

Traditional reinsurance includes individual and group life and health, disability, and critical illness reinsurance. Life reinsurance primarily refers to reinsurance of individual or group-issued term, whole life, universal life, and joint and last survivor insurance policies. Health and disability reinsurance primarily refers to reinsurance of individual or group health policies. Critical illness reinsurance provides a benefit in the event of the diagnosis of a pre-defined critical illness.

Traditional reinsurance is written on a facultative or automatic treaty basis. Facultative reinsurance is individually underwritten by the reinsurer for each policy to be reinsured, with the pricing and other terms established based upon rates negotiated in advance. Facultative reinsurance is normally purchased by ceding companies for medically impaired lives, unusual risks, or liabilities in excess of the binding limits specified in their automatic reinsurance treaties.

An automatic reinsurance treaty provides that the ceding company will cede risks to a reinsurer on specified blocks of policies where the underlying policies meet the ceding company’s underwriting criteria. In contrast to facultative reinsurance, the reinsurer does not approve each individual policy being reinsured. Automatic reinsurance treaties generally provide that the reinsurer will be liable for a portion of the risk associated with the specified policies written by the ceding company. Automatic reinsurance treaties specify the ceding company’s binding limit, which is the maximum amount of risk on a given life that can be ceded automatically to the reinsurer and that the reinsurer must accept. The binding limit may be stated either as a multiple of the ceding company’s retention or as a stated dollar amount.

Facultative and automatic reinsurance may be written as yearly renewable term, coinsurance, modified coinsurance or coinsurance with funds withheld. Under a yearly renewable term treaty, the reinsurer assumes primarily the mortality or morbidity risk. Under a coinsurance arrangement, depending upon the terms of the contract, the reinsurer may share in the risk of loss due to mortality or morbidity, lapses, and the investment risk, if any, inherent in the underlying policy. Modified coinsurance and coinsurance with funds withheld differ from coinsurance in that the assets supporting the reserves are retained by the ceding company.

Generally, the amount of life and health reinsurance ceded is stated on an excess or a quota share basis. Reinsurance on an excess basis covers amounts in excess of an agreed-upon retention limit. Retention limits vary by ceding company and also may vary by the age or underwriting classification of the insured, the product, and other factors. Under quota share reinsurance, the ceding company states its retention in terms of a fixed percentage of the risk with the remainder to be ceded to one or more reinsurers up to the maximum binding limit.

Reinsurance agreements, whether facultative or automatic, may include recapture rights, which permit the ceding company to reassume all or a portion of the risk formerly ceded to the reinsurer after an agreed-upon period of time (generally 10 years) or in some cases due to changes in the financial condition or ratings of the reinsurer. Recapture of business previously ceded does not affect premiums ceded prior to the recapture of such business, but would reduce premiums in subsequent periods. The potential adverse effects of recapture rights are mitigated by the following factors: (i) recapture rights vary by treaty and the risk of recapture is a factor that is considered when pricing a reinsurance agreement; (ii) ceding companies generally may exercise their recapture rights only to the extent they have increased their retention limits for the reinsured policies; and (iii) ceding companies generally must recapture all of the policies eligible for recapture under the agreement in a particular year if any are recaptured (which prevents

a ceding company from recapturing only the most profitable policies). In addition, when a ceding company recaptures reinsured policies, the reinsurer releases the reserves it maintained to support the recaptured portion of the policies.

Financial Solutions

Financial solutions include longevity reinsurance, asset-intensive reinsurance, and financial reinsurance.

Longevity Reinsurance

In many countries, companies are increasingly interested in reducing their exposure to longevity risk related to employee retirement benefits. This concern comes from both the absolute size of the risk and also through the volatility that changes in life expectancy can have on their reported earnings. In addition, insurance companies that offer lifetime annuities are seeking ways to manage their current exposure, while also recognizing the potential to take on more risk from employers and individuals.

The Company has entered into transactions on existing longevity business for clients in Europe and Canada. These have been arrangements with traditional insurance companies, as well as customized arrangements for banks dealing with pension schemes.

Asset-Intensive Reinsurance

Asset-intensive reinsurance refers to the full-risk coinsurance of annuities or reinsurance that has a significant investment component. Asset-intensive reinsurance allows the Company's clients to take advantage of growth opportunities that might otherwise not be available due to restrictions on available capital or concerns about the size of the investment risk on their balance sheets.

An ongoing partnership with clients is important with asset-intensive reinsurance because of the active management involved in this type of reinsurance. This active management includes investment decisions, investment and claims management, and the determination of non-guaranteed elements. Some examples of asset-intensive reinsurance are: fixed deferred annuities, indexed annuities, unit-linked variable annuities, universal life corporate-owned life insurance and bank-owned life insurance, unit-linked variable life, immediate/payout annuities, whole life, disabled life reserves, and extended term insurance.

Financial Reinsurance

Financial reinsurance primarily involves assisting ceding companies in meeting applicable regulatory requirements by enhancing the ceding companies' financial strength and regulatory surplus position. Financial reinsurance transactions do not qualify as reinsurance under U.S. generally accepted accounting principles ("GAAP"), due to the low-risk nature of the transactions. These transactions are reported in accordance with deposit accounting guidelines.

B. Corporate Structure

As a holding company, RGA is separate and distinct from its subsidiaries and has no significant business operations of its own. Therefore, it relies on the dividends from its insurance companies and other subsidiaries as the principal source of cash flow to meet its obligations, pay dividends and repurchase common stock. Information regarding the cash flow and liquidity needs of RGA may be found in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources.

Regulation

The following table provides the jurisdiction of the regulatory authority for RGA’s primary operating and captive subsidiaries:

Subsidiary	Regulatory Authority Jurisdiction
RGA Reinsurance Company (“RGA Reinsurance”)	Missouri
Parkway Reinsurance Company (“Parkway Re”)	Missouri
Rockwood Reinsurance Company (“Rockwood Re”)	Missouri
Castlewood Reinsurance Company (“Castlewood Re”)	Missouri
Chesterfield Reinsurance Company (“Chesterfield Re”)	Missouri
Reinsurance Company of Missouri, Incorporated (“RCM”)	Missouri
Timberlake Reinsurance Company II (“Timberlake Re”)	South Carolina
RGA Life Reinsurance Company of Canada (“RGA Canada”)	Canada
RGA Reinsurance Company (Barbados) Ltd. (“RGA Barbados”)	Barbados
RGA Americas Reinsurance Company, Ltd. (“RGA Americas”)	Bermuda
Manor Reinsurance, Ltd. (“Manor Re”)	Barbados
RGA Atlantic Reinsurance Company Ltd. (“RGA Atlantic”)	Barbados
RGA Worldwide Reinsurance Company, Ltd. (“RGA Worldwide”)	Barbados
RGA Global Reinsurance Company, Ltd. (“RGA Global”)	Bermuda
RGA Reinsurance Company of Australia Limited (“RGA Australia”)	Australia
RGA International Reinsurance Company dac (“RGA International”)	Ireland
RGA Reinsurance Company of South Africa, Limited (“RGA South Africa”)	South Africa
Aurora National Life Assurance Company (“Aurora National”)	California

Certain of the Company’s subsidiaries are subject to regulations in the other jurisdictions in which they are licensed or authorized to do business. Insurance laws and regulations, among other things, establish minimum capital requirements and limit the amount of dividends, distributions, and intercompany payments that affiliates can make without regulatory approval. Additionally, insurance laws and regulations impose restrictions on the amounts and types of investments that insurance companies may hold. New standards imposed upon European insurers by Solvency II, revisions to the insurance laws of Bermuda similar to Solvency II, changes to regulations in Canada and revisions to the insurance holding company laws in the U.S. and other jurisdictions could, in the near future, affect certain subsidiaries, and the clients of each, to varying degrees.

U.S. Regulation*Insurance Regulation*

The insurance laws and regulations, as well as the level of supervisory authority that may be exercised by the various state insurance departments, vary by jurisdiction. These laws and regulations generally grant broad powers to supervisory agencies or regulators to examine and supervise insurance companies and insurance holding companies with respect to every significant aspect of the conduct of the insurance business. This includes the power to pre-approve the execution or modification of contractual arrangements. These laws and regulations generally require insurance companies to meet certain solvency standards and asset tests, to maintain minimum standards of financial strength and to file certain reports with regulatory authorities (including information concerning their capital structure, ownership and financial condition). These laws and regulations subject insurers to potential assessments for amounts paid by guarantee funds. RGA Reinsurance, Chesterfield Re and RCM are subject to the state of Missouri’s adoption of the National Association of Insurance Commissioners (“NAIC”) Model Audit Rule which requires an insurer to have an annual audit by an independent certified public accountant, provide an annual management report of internal control over financial reporting, file the resulting reports with the Director of Insurance and maintain an audit committee. Aurora National is subject to similar regulation by the State of California. Moreover, Insurance Holding Company System Regulatory Acts in the U.S. permit the Missouri regulator to request and consider, in its regulation of the solvency of and capital standards for RGA Reinsurance, Chesterfield Re and RCM and the California regulator to request and consider, in its regulation of the solvency of and capital standards for Aurora National, information about the operations of other subsidiaries of RGA and the extent to which there may be deemed to exist contagion risk posed by those operations. In addition, RGA is subject to a supervisory college which involves regular meetings of the insurance regulators of the reinsurance entities of RGA. These regular meetings bring about additional questions and perhaps even limitations on some of the activities of the reinsurance company subsidiaries of RGA.

RGA’s reinsurance subsidiaries are required to file statutory financial statements in each jurisdiction in which they are licensed and may be subject to onsite, periodic examinations by the insurance regulators of the jurisdictions in which each is licensed, authorized, or accredited. To date, none of the regulators’ reports related to the Company’s periodic examinations have contained material adverse findings.

Although some of the rates and policy terms of U.S. direct insurance agreements are regulated by state insurance departments, the rates, policy terms, and conditions of reinsurance agreements generally are not subject to regulation by any regulatory authority. The same is true outside of the U.S. In the U.S., however, the NAIC Model Law on Credit for Reinsurance, which has been adopted in most states, imposes certain requirements for an insurer to take reserve credit for risk ceded to a reinsurer. Generally, the reinsurer is required to be licensed or accredited in the insurer's state of domicile, or post security for reserves transferred to the reinsurer in the form of letters of credit or assets placed in trust. The NAIC Life and Health Reinsurance Agreements Model Regulation, which has been passed in most states, imposes additional requirements for insurers to claim reserve credit for reinsurance ceded (excluding yearly renewable term reinsurance and non-proportional reinsurance). These requirements include bona fide risk transfer, an insolvency clause, written agreements, and filing of reinsurance agreements involving in force business, among other things. Outside of the U.S., rules for reinsurance and requirements for minimum risk transfer are less specific and are less likely to be published as rules, but nevertheless standards can be imposed to varying extents.

U.S. Valuation of Life Policies Model Regulation (commonly referred to as Regulation XXX), implemented in the U.S. for various types of life insurance business, significantly increased the level of reserves that U.S. life insurance and life reinsurance companies must hold on their statutory financial statements for various types of life insurance business, primarily certain level premium term life products. The reserve levels required under Regulation XXX are normally in excess of reserves required under GAAP. In situations where primary insurers have reinsured business to reinsurers that are unlicensed and unaccredited in the U.S., the reinsurer must provide collateral equal to its reinsurance reserves in order for the ceding company to receive statutory financial statement credit. Reinsurers have historically utilized letters of credit for the benefit of the ceding company, or have placed assets in trust for the benefit of the ceding company, or have used other structures as the primary forms of collateral.

RGA Reinsurance is the primary subsidiary of the Company subject to Regulation XXX. In order to manage the effect of Regulation XXX on its statutory financial statements, RGA Reinsurance has retroceded a majority of Regulation XXX reserves to unaffiliated and affiliated unlicensed reinsurers and special purpose reinsurers, or captives. RGA Reinsurance's statutory capital may be significantly reduced if the unaffiliated or affiliated reinsurer is unable to provide the required collateral to support RGA Reinsurance's statutory reserve credits and RGA Reinsurance cannot find an alternative source for the collateral. New NAIC requirements for life insurers using special purpose reinsurers are now in place. While RGA Reinsurance's current reserve financing arrangements using special purpose reinsurers or "captive reinsurers" are permitted to remain in place, the new rules place limitations on RGA Reinsurance's ability to utilize captive reinsurers to finance reserve growth related to future business. Such limitations have caused the Company to utilize alternative retrocession strategies, primarily involving the use of a certified reinsurer as discussed below.

RGA Reinsurance, Chesterfield Re, Parkway Re, Rockwood Re, Castlewood Re and RCM prepare statutory financial statements in conformity with accounting practices prescribed or permitted by the State of Missouri. Timberlake Re prepares statutory financial statements in conformity with accounting practices prescribed or permitted by the State of South Carolina. Aurora National prepares its statutory financial statements in conformity with accounting practices prescribed or permitted by the State of California. Each of these states require domestic insurance companies to prepare their statutory financial statements in accordance with the NAIC Accounting Practices and Procedures manual subject to any deviations permitted by each state's insurance commissioner. The Company's non-U.S. subsidiaries are subject to the regulations and reporting requirements of their respective countries of domicile.

Based on the growth of the Company's business and the pattern of reserve levels under Regulation XXX associated with term life business and other statutory reserve requirements, the amount of ceded reserve credits is expected to grow, albeit at slower rates than in the immediate past. This growth will require the Company to obtain additional letters of credit, put additional assets in trust, or utilize other funding mechanisms to support reserve credits. If the Company is unable to support the reserve credits, the regulatory capital levels of several of its subsidiaries may be significantly reduced, while the regulatory capital requirements for these subsidiaries would not change. The reduction in regulatory capital could affect the Company's ability to write new business and retain existing business.

Affiliated captives are commonly used in the insurance industry to help manage statutory reserve and collateral requirements and are often domiciled in the same state as the insurance company that sponsors the captive. The NAIC has analyzed the insurance industry's use of affiliated captive reinsurers to satisfy certain reserve requirements and has adopted measures to promote uniformity in both the approval and supervision of such reinsurers. New standards to address the use of captive reinsurers were implemented, allowing current captives to continue in accordance with their currently approved plans. State insurance regulators that regulate the Company's domestic insurance companies have placed additional restrictions on the use of newly established captive reinsurers which may increase costs and add complexity. As a result, the Company may need to alter the type and volume of business it reinsures, increase prices on those products, raise additional capital to support higher regulatory reserves or implement higher cost strategies.

In the U.S., the introduction of the certified reinsurer has provided an alternative way to manage collateral requirements. In 2014, RGA Americas was designated as a certified reinsurer by the Missouri Department of Insurance, Financial Institutions and Professional Registration ("MDOI"). This designation allows the Company to retrocede business to RGA Americas in lieu of

using captives for collateral requirements. Effective in 2017, principles-based reserves are permitted in the U.S. During 2016, the NAIC amended the standard valuation law to adopt life principles-based reserving to be effective January 1, 2017, allowing a three-year adoption period. The Company is currently evaluating the impact of the new requirements and expects to defer implementation until 2019. The Company has chosen not to establish captives subject to the new regulations as it evaluates the impact of the regulations on new captives, and how these new captives fit into the Company's overall risk management and financing programs.

Reinsurers may place assets in trust to satisfy collateral requirements for certain treaties. In addition, the Company holds securities in trust to satisfy collateral requirements under certain third-party reinsurance treaties. Under certain conditions, the Company may be obligated to move reinsurance from one subsidiary of RGA to another subsidiary or make payments under a given treaty. These conditions include change in control or ratings of the subsidiary, insolvency, nonperformance under a treaty, or loss of the subsidiary's reinsurance license. If the Company is ever required to perform under these obligations, the risk to the consolidated company under the reinsurance treaties would not change; however, additional capital may be required due to the change in jurisdiction of the subsidiary reinsuring the business and may create a strain on liquidity, possibly causing a reduction in dividend payments or hampering the Company's ability to write new business or retain existing business.

Capital Requirements

Risk-Based Capital ("RBC") guidelines promulgated by the NAIC are applicable to RGA Reinsurance, RCM, Aurora National and Chesterfield Re, and identify minimum capital requirements based upon business levels and asset mix. These subsidiaries maintain capital levels in excess of the amounts required by the applicable guidelines. Timberlake Re, Parkway Re, Rockwood Re and Castlewood Re's capital requirements are determined solely by their licensing orders issued by their states of domicile. Pursuant to its licensing order issued by the South Carolina Department of Insurance, Timberlake Re only calculates RBC as a means of demonstrating its ability to pay principal and interest on its surplus note issued to Timberlake Financial, L.L.C. ("Timberlake Financial"). It is not otherwise subject to the RBC guidelines. Similarly, Parkway Re, Rockwood Re and Castlewood Re are not subject to the requirements of the NAIC's RBC guidelines. Regulations in international jurisdictions also require certain minimum capital levels, and subject the companies operating in such jurisdictions, to oversight by the applicable regulatory bodies. RGA's subsidiaries meet the minimum capital requirements in their respective jurisdictions. The Company cannot predict the effect that any proposed or future legislation or rulemaking in the countries in which it operates may have on the financial condition or operations of the Company or its subsidiaries.

Insurance Holding Company Regulations

RGA Reinsurance, Chesterfield Re, Parkway Re, Rockwood Re, Castlewood Re and RCM are subject to regulation under the insurance and insurance holding company statutes of Missouri. Aurora National is subject to regulation under the insurance and insurance holding company statutes of California. These insurance holding company laws and regulations generally require insurance and reinsurance subsidiaries of insurance holding companies to register and file with the home state regulator certain reports describing, among other information, capital structure, ownership, financial condition, certain intercompany transactions, and general business operations. The insurance holding company statutes and regulations also require prior approval of, or in certain circumstances, prior notice to the home state regulator of, certain material intercompany transfers of assets, as well as certain transactions between insurance companies, their parent companies and affiliates.

Under current Missouri and California insurance laws and regulations, unless (i) certain filings are made with the home state regulator, (ii) certain requirements are met, including a public hearing, and (iii) approval or exemption is granted by the home state regulator, no person may acquire any voting security or security convertible into a voting security of an insurance holding company, such as RGA, which controls a domestic insurance company, or merge with such an insurance holding company, if as a result of such transaction such person would "control" the insurance holding company. "Control" is presumed to exist under Missouri law if a person directly or indirectly owns or controls 10% or more of the voting securities of another person. Revisions to the insurance holding company regulations of Missouri and California require increased disclosure to regulators of matters within the RGA group of companies.

Restrictions on Dividends and Distributions

Current Missouri law, applicable to RCM and its subsidiaries, RGA Reinsurance and Chesterfield Re, permits the payment of dividends or distributions which, together with dividends or distributions paid during the preceding twelve months, do not exceed the greater of (i) 10% of statutory capital and surplus as of the preceding December 31, or (ii) statutory net gain from operations for the preceding calendar year. Any proposed dividend in excess of this amount is considered an "extraordinary dividend" and may not be paid until it has been approved, or a 30-day waiting period has passed during which it has not been disapproved, by the Director of the MDOI. Additionally, dividends may be paid only to the extent the insurer has unassigned surplus (as opposed to contributed surplus). Historically, RGA has not relied upon dividends from its subsidiaries to fund its obligations. However, the regulatory limitations and other restrictions described herein could limit the Company's financial flexibility in the future should it choose to or need to use subsidiary dividends as a funding source for its obligations. See Note 11 - "Financial Condition and Net Income on a Statutory Basis - Significant Subsidiaries" in the Notes to Consolidated Financial Statements for additional information on the Company's dividend restrictions.

The California Insurance Holding Company Act defines an extraordinary dividend consistent with the definition found in the Missouri Insurance Holding Company Act and imposes an identical restriction upon the ability of Aurora National to pay dividends to RGA Reinsurance. In contrast to both the Missouri and the California Insurance Holding Company Acts, the NAIC Model Insurance Holding Company System Regulatory Act defines an extraordinary dividend as a dividend or distribution which, together with dividends or distributions paid during the preceding twelve months, exceeds the lesser of (i) 10% of statutory capital and surplus as of the preceding December 31, or (ii) statutory net gain from operations for the preceding calendar year. The Company is unable to predict whether, when, or if, Missouri will enact a new regulation for extraordinary dividends.

Missouri insurance laws and regulations also require that the statutory surplus of Chesterfield Re, RCM and RGA Reinsurance following any dividend or distribution be reasonable in relation to their outstanding liabilities and adequate to meet their financial needs. The Director of the MDOI may call for a rescission of the payment of a dividend or distribution by these entities that would cause their statutory surplus to be inadequate under the standards of the Missouri insurance regulations. California insurance laws and regulations impose the same restrictions on Aurora National as to the dividends or distributions that are made.

Pursuant to the South Carolina Director of Insurance, Timberlake Re may declare dividends subject to a minimum Total Adjusted Capital threshold, as defined by the NAIC's RBC regulation. As of December 31, 2016, Timberlake Re met the minimum required threshold. Any dividends paid by Timberlake Re would be paid to Timberlake Financial, which in turn is subject to contractual limitations on the amount of dividends it can pay to RCM.

Dividend payments from non-U.S. operations are subject to similar restrictions established by local regulators. The non-U.S. regulatory regimes also commonly limit the dividend payments to the parent to a portion of the prior year's statutory income, as determined by the local accounting principles. The regulators of the Company's non-U.S. operations may also limit or prohibit profit repatriations or other transfers of funds to the U.S. if such transfers are deemed to be detrimental to the solvency or financial strength of the non-U.S. operations, or for other reasons. Most of the non-U.S. operating subsidiaries are second tier subsidiaries which are owned by various non-U.S. holding companies. The capital and rating considerations applicable to the first tier subsidiaries may also impact the dividend flow to RGA.

Default or Liquidation

In the event that RGA defaults on any of its debt or other obligations, or becomes the subject of bankruptcy, liquidation, or reorganization proceedings, the creditors and stockholders of RGA will have no right to proceed against the assets of any of the subsidiaries of RGA. If any of RGA's reinsurance subsidiaries were to be liquidated or dissolved, the liquidation or dissolution would be conducted in accordance with the rules and regulations of the appropriate governing body in the state or country of the subsidiary's domicile. The creditors of any such reinsurance company, including, without limitation, holders of its reinsurance agreements and state guaranty associations (if applicable), would be entitled to payment in full from such assets before RGA, as a direct or indirect stockholder, would be entitled to receive any distributions or other payments from the remaining assets of the liquidated or dissolved subsidiary.

Federal Regulation

Since the 2010 enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act, there has been renewed interest in the U.S. federal government becoming a regulator of insurance and reinsurance. Under the Dodd-Frank Act, recent activity by the Federal Insurance Office within the U.S. Treasury Department has resulted in the negotiation of a "covered agreement" with the European Union. The covered agreement, while promoting the recognition of U.S. state insurance regulators as group supervisors of U.S.-based global reinsurers such as RGA, also provides for an elimination of the collateral that reinsurers based in the European Union must currently post in favor of U.S. ceding insurers. This agreement, coupled with new state credit for reinsurance laws, has the potential to lower the cost at which RGA Reinsurance's competitors are able to provide reinsurance to U.S. insurers. Additionally under the Dodd-Frank Act, a few of RGA's client ceding insurers domiciled in the U.S. have been designated for solvency supervision by the Federal Reserve. These entities have been designated systemically important so as to warrant the imposition of an additional layer of regulation over already existing state regulation. While it is not expected that any RGA entity would be deemed to be systemically important and become subject to this additional scrutiny, the reinsurance programs RGA maintains with the insurers so designated as systemically important are subject to scrutiny by the Federal Reserve. It is possible that more of RGA's clients will be given this designation leading to additional scrutiny of those clients' reinsurance programs by the Federal Reserve. With the regulation of some U.S. domiciled insurers by the U.S. government, it is possible that the scope of the federal government's ability to regulate insurers and reinsurers will be expanded. It is not possible to predict the effect of such decisions or changes in law on the operation of the Company, but the Dodd-Frank Act makes it more likely than in the past that insurance or reinsurance may be regulated at the federal level. A shift in regulation from the state to the federal level may bring into question the continued validity of the McCarran-Ferguson Act, which exempts the "business of insurance" from most federal laws, including anti-trust laws. With the McCarran-Ferguson Act exemption for the business of insurance, a reinsurer may set rate, underwriting and claims handling standards for its ceding company clients to follow.

Environmental Considerations

Federal, state and local environmental laws and regulations apply to the Company's ownership and operation of real property. Inherent in owning and operating real property are the risks of hidden environmental liabilities and the costs of any required clean-up. Under the laws of certain states, contamination of a property may give rise to a lien on the property to secure recovery of the costs of clean-up. In several states, this lien has priority over the lien of an existing mortgage against such property. In addition, in some states and under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), the Company may be liable, in certain circumstances, as an "owner" or "operator," for costs of cleaning-up releases or threatened releases of hazardous substances at a property mortgaged to it. The Company also risks environmental liability when it forecloses on a property mortgaged to it, although federal legislation provides for a safe harbor from CERCLA liability for secured lenders that foreclose and sell the mortgaged real estate, provided that certain requirements are met. However, there are circumstances in which actions taken could still expose the Company to CERCLA liability. Application of various other federal and state environmental laws could also result in the imposition of liability on the Company for costs associated with environmental hazards.

The Company routinely conducts environmental assessments prior to taking title to real estate through foreclosure on real estate collateralizing mortgages that it holds. Although unexpected environmental liabilities can always arise, the Company seeks to minimize this risk by undertaking these environmental assessments and complying with its internal procedures, and as a result, the Company believes that any costs associated with compliance with environmental laws and regulations or any clean-up of properties would not have a material adverse effect on the Company's results of operations.

International Regulation

RGA's international insurance operations are principally regulated by insurance regulatory authorities in the jurisdictions in which they are located or operate branch offices. The regulation includes minimum capital, solvency and governance requirements. The authority of RGA's international operations to conduct business is subject to licensing requirements, inspections and approvals and these authorizations are subject to modification and revocation. Periodic examinations of the insurance company books and records, financial reporting requirements, risk management processes and governance procedures are among the techniques used by regulators to supervise RGA's non-U.S. insurance businesses. The regulators of RGA's non-U.S. insurance companies and the California Department of Insurance are also invited to be part of the supervisory college held by the Missouri Department of Insurance, RGA's group supervisor.

Much like the adoption of Dodd-Frank in the U.S., regulators around the world are reviewing the causes of the 2008 - 2009 financial crisis and considering ways to avoid similar problems in the future. A group leading this effort is the Financial Stability Board ("FSB"). The FSB consists of representatives of national financial authorities of the G20 nations. The G20 and the FSB and related governmental bodies have developed proposals to address issues such as group supervision, capital and solvency standards, systemic economic risk and corporate governance, including executive compensation and many other related issues associated with the financial crisis. At the direction of the FSB, the International Association of Insurance Supervisors ("IAIS") is developing a model framework for the supervision of internationally active insurance groups ("IAIG's") that contemplates "group-wide supervision" across national boundaries. RGA anticipates that it may, in future years, be designated an IAIG bringing about requirements for RGA to conduct a group-wide risk and solvency assessment to monitor and manage its overall solvency. At this time RGA cannot predict what additional capital requirements, compliance costs or other burdens these requirements would impose on it, if adopted. There is also the potential for inconsistent or conflicting regulation of the RGA group of companies as lawmakers and regulators in multiple jurisdictions simultaneously pursue these initiatives.

Additionally, RGA International, operating in the European Economic Area ("EEA"), is subject to the Solvency II measures developed by the European Insurance and Occupational Pensions Authority and will be required to abide by the evolving risk management practices, capital standards and disclosure requirements of the Solvency II framework. Additionally, the Company's clients located in the EEA will need to abide by these standards in operating their insurance businesses, including the management of their ceded reinsurance. Currently, insurers and reinsurers located in the EEA are operating under Solvency II. The Company expects Solvency II to have a significant influence on not only the regulation of solvency measures applied to insurers and reinsurers operating within the EEA, but the Company also expects the solvency regulation measures to influence future regulatory structures of countries outside of the EEA, including China and Japan. Influences of the Solvency II - type framework are already present in the insurance regulation of Bermuda and currently influence the solvency measures imposed upon RGA Global and RGA Americas.

New and proposed restrictions in many European and Asian countries on RGA's ability to transfer data from one country to another also threaten to make its operations less efficient. Many of these restrictions either do not anticipate the processing of data for reinsurance purposes at all or place costly restrictions on the ability of a reinsurer to service its business by requiring processing to be done within the borders of the country in which the insured consumer resides.

Additionally, requirements proposed or becoming effective in Indonesia and India limit the amount of insurance business that can be ceded to reinsurers not domiciled in those countries. These forced localization requirements have the impact of limiting the amount of reinsurance business RGA can conduct in those countries without the participation of a local reinsurer.

RGA expects the scope and extent of regulation outside of the U.S., as well as group regulatory oversight generally, to continue to increase.

Ratings

Insurer financial strength ratings, sometimes referred to as claims paying ratings, represent the opinions of rating agencies regarding the financial ability of an insurance company to meet its obligations under an insurance policy. The Company’s insurer financial strength ratings as of the date of this filing are listed in the table below for each rating agency that meets with the Company’s management on a regular basis. As of the date of this filing, all ratings listed below are on stable outlook.

<i>Insurer Financial Strength Ratings</i>	A.M. Best Company ⁽¹⁾	Moody’s Investors Service ⁽²⁾	Standard & Poor’s ⁽³⁾
RGA Reinsurance Company	A+	A1	AA-
RGA Life Reinsurance Company of Canada	A+	Not Rated	AA-
RGA International Reinsurance Company dac	Not Rated	Not Rated	AA-
RGA Global Reinsurance Company, Ltd.	Not Rated	Not Rated	AA-
RGA Reinsurance Company of Australia Limited	Not Rated	Not Rated	AA-
RGA Americas Reinsurance Company, Ltd.	A+	Not Rated	AA-
RGA Atlantic Reinsurance Company Ltd.	A+	Not Rated	Not Rated

- (1) An A.M. Best Company (“A.M. Best”) insurer financial strength rating of “A+” (superior) is the second highest out of sixteen possible ratings and is assigned to companies that have, in A.M. Best’s opinion, a superior ability to meet their ongoing insurance obligations.
- (2) A Moody’s Investors Service (“Moody’s”) insurer financial strength rating of “A1” (good) is the fifth highest rating out of twenty-one possible ratings and indicates that Moody’s believes the insurance company offers good financial security; however, elements may be present which suggest a susceptibility to impairment sometime in the future.
- (3) A Standard & Poor’s (“S&P”) insurer financial strength rating of “AA-” (very strong) is the fourth highest rating out of twenty-three possible ratings. According to S&P’s rating scale, a rating of “AA-” means that, in S&P’s opinion, the insurer has very strong financial security characteristics.

The ability to write reinsurance partially depends on a reinsurer’s financial condition and its financial strength ratings. These ratings are based on a company’s ability to pay policyholder obligations and are not directed toward the protection of investors. A ratings downgrade could adversely affect the Company’s ability to compete. See Item 1A – “Risk Factors” for more on the potential effects of a ratings downgrade.

Underwriting

Automatic. The Company’s management determines whether to write automatic reinsurance business by considering many factors, including the types of risks to be covered; the ceding company’s retention limit and binding authority, product, and pricing assumptions; and the ceding company’s underwriting standards, financial strength and distribution systems. For automatic business, the Company ensures that the underwriting standards, procedures and guidelines of its ceding companies are priced appropriately and consistent with the Company’s expectations. To this end, the Company conducts periodic reviews of the ceding companies’ underwriting and claims personnel and procedures.

Facultative. The Company has developed underwriting policies, procedures and standards with the objective of controlling the quality of business written as well as its pricing. The Company’s underwriting process emphasizes close collaboration between its underwriting, actuarial, and administration departments. Management periodically updates these underwriting policies, procedures, and standards to account for changing industry conditions, market developments, and changes occurring in the field of medical technology. These policies, procedures, and standards are documented in electronic underwriting manuals made available to all the Company’s underwriters. The Company regularly performs internal reviews of both its underwriters and underwriting process.

The Company’s management determines whether to accept facultative reinsurance business on a prospective insured by reviewing the application, medical information and other underwriting information appropriate to the age of the prospective insured and the face amount of the application. An assessment of medical and financial history follows with decisions based on underwriting knowledge, manual review and consultation with the Company’s medical directors as necessary. Many facultative applications involve individuals with multiple medical impairments, such as heart disease, high blood pressure, and diabetes, which require a complex underwriting/mortality assessment. The Company employs medical directors and medical consultants to assist its underwriters in making these assessments.

Pricing

Automatic and Facultative. The Company has pricing actuaries dedicated in every geographic market and in every product category who develop reinsurance treaty rates following the Company's policies, procedures and standards. Biometric assumptions are based primarily on the Company's own mortality, morbidity and persistency experience, reflecting industry and client-specific experience. Economic and asset-related pricing assumptions are based on current and long-term market conditions and are developed by actuarial and investment personnel with appropriate experience and expertise. Management has established a high-level oversight of the processes and results of these activities, which includes peer reviews in every market as well as centralized procedures and processes for reviewing and auditing pricing activities.

Operations

The Company's business has been primarily obtained directly, rather than through brokers. The Company has an experienced sales and marketing staff that works to provide responsive service and maintain existing relationships.

The Company's administration, auditing, valuation and finance departments are responsible for treaty compliance auditing, financial analysis of results, generation of internal management reports, and periodic audits of administrative and underwriting practices. A significant effort is focused on periodic audits of administrative and underwriting practices, and treaty compliance of clients.

The Company's claims departments review and verify reinsurance claims, obtain the information necessary to evaluate claims, and arrange for timely claims payments. Claims are subjected to a detailed review process to ensure that the risk was properly ceded, the claim complies with the contract provisions, and the ceding company is current in the payment of reinsurance premiums to the Company. In addition, the claims departments monitor both specific claims and the overall claims handling procedures of ceding companies.

Customer Base

The Company provides reinsurance products primarily to the largest life insurance companies in the world. In 2016, the Company's five largest clients generated approximately \$2.1 billion or 20.6% of the Company's gross premiums. In addition, 21 other clients each generated annual gross premiums of \$100.0 million or more, and the aggregate gross premiums from these clients represented approximately 35.7% of the Company's gross premiums. No individual client generated 10% or more of the Company's total gross premiums. For the purpose of this disclosure, companies that are within the same insurance holding company structure are combined.

Competition

Reinsurers compete on the basis of many factors, including financial strength, pricing and other terms and conditions of reinsurance agreements, reputation, service, and experience in the types of business underwritten. The Company's competition includes other reinsurance companies as well as other providers of financial services. The Company believes that its primary competitors on a global basis are currently the following, or their affiliates: Munich Re, Swiss Re, Hannover Re and SCOR Global Re. In addition, the Company competes with Pacific Life Re, Prudential Financial and a number of other financial service providers on annuity block business. However, within the reinsurance industry, the competitors can change from year to year.

Employees

As of December 31, 2016, the Company had 2,482 employees located throughout the world. None of these employees are represented by a labor union.

C. Segments

The Company obtains substantially all of its revenues through reinsurance agreements that cover a portfolio of life and health insurance products, including term life, credit life, universal life, whole life, group life and health, joint and last survivor insurance, critical illness, disability, longevity as well as asset-intensive (e.g., annuities) and financial reinsurance. Generally, the Company, through various subsidiaries, has provided reinsurance for mortality, morbidity, and lapse risks associated with such products. With respect to asset-intensive products, the Company has also provided reinsurance for investment-related risks. In the fourth quarter of 2016, the Company changed the name of its Non-Traditional segments to Financial Solutions. The name change better aligns external reports to internally used terminology. This name change does not affect any previously reported results for the Financial Solutions segments.

The following table sets forth the Company's premiums attributable to each of its segments for the periods indicated on both a gross assumed basis and net of premiums ceded to third parties:

Gross and Net Premiums by Segment
(in millions)

	Year Ended December 31,					
	2016		2015		2014	
	Gross	Net	Gross	Net	Gross	Net
U.S. and Latin America:						
Traditional	\$ 5,865.6	\$ 5,249.6	\$ 5,413.7	\$ 4,806.7	\$ 5,013.3	\$ 4,725.5
Financial Solutions	64.6	24.4	61.0	22.2	59.5	20.1
Total U.S. and Latin America	5,930.2	5,274.0	5,474.7	4,828.9	5,072.8	4,745.6
Canada:						
Traditional	965.1	928.6	881.2	838.9	1,002.9	953.4
Financial Solutions	38.7	38.7	38.0	38.0	21.2	21.2
Total Canada	1,003.8	967.3	919.2	876.9	1,024.1	974.6
Europe, Middle East and Africa:						
Traditional	1,171.0	1,140.1	1,147.0	1,121.5	1,187.8	1,157.4
Financial Solutions	264.7	180.3	260.9	171.8	216.6	216.6
Total Europe, Middle East and Africa	1,435.7	1,320.4	1,407.9	1,293.3	1,404.4	1,374.0
Asia Pacific:						
Traditional	1,731.8	1,681.5	1,592.6	1,551.6	1,581.6	1,540.9
Financial Solutions	5.4	5.4	19.5	19.5	34.0	34.0
Total Asia Pacific	1,737.2	1,686.9	1,612.1	1,571.1	1,615.6	1,574.9
Corporate and Other	0.3	0.3	0.5	0.5	0.8	0.8
Total	\$ 10,107.2	\$ 9,248.9	\$ 9,414.4	\$ 8,570.7	\$ 9,117.7	\$ 8,669.9

The following table sets forth selected information concerning assumed life reinsurance business in force and assumed new business volume by segment for the periods indicated. The terms "in force" and "new business" refer to insurance policy face amounts or net amounts at risk.

Reinsurance Business In Force and New Business by Segment
(in billions)

	As of December 31,					
	2016		2015		2014	
	In Force	New Business	In Force	New Business	In Force	New Business
U.S. and Latin America:						
Traditional	\$ 1,609.3	\$ 126.4	\$ 1,594.3	\$ 203.9	\$ 1,483.9	\$ 176.9
Financial Solutions	2.1	—	2.1	—	1.4	—
Total U.S. and Latin America	1,611.4	126.4	1,596.4	203.9	1,485.3	176.9
Canada:						
Traditional	355.7	34.9	333.0	38.6	402.8	48.3
Financial Solutions	—	—	—	—	—	—
Total Canada	355.7	34.9	333.0	38.6	402.8	48.3
Europe, Middle East and Africa:						
Traditional	603.0	169.8	602.7	171.6	561.1	175.2
Financial Solutions	—	—	—	—	—	—
Total Europe, Middle East and Africa	603.0	169.8	602.7	171.6	561.1	175.2
Asia Pacific:						
Traditional	492.2	73.7	462.7	76.9	494.0	81.6
Financial Solutions	0.2	—	0.3	—	0.3	—
Total Asia Pacific	492.4	73.7	463.0	76.9	494.3	81.6
Total	\$ 3,062.5	\$ 404.8	\$ 2,995.1	\$ 491.0	\$ 2,943.5	\$ 482.0

Reinsurance business in force reflects the addition or acquisition of new life reinsurance business, offset by terminations (e.g., life and group contract terminations, lapses of underlying policies, deaths of insureds, and recapture), changes in foreign currency exchange, and any other changes in the amount of insurance in force. As a result of terminations and other changes, assumed in force amounts at risk of \$337.4 billion, \$439.4 billion, and \$428.4 billion were released in 2016, 2015 and 2014, respectively.

Additional information regarding the operations of the Company's segments and geographic operations is contained in Note 15 – "Segment Information" in the Notes to Consolidated Financial Statements.

U.S. and Latin America Operations

The U.S. and Latin America operations represented 57.0%, 56.3% and 54.7% of the Company's net premiums in 2016, 2015 and 2014, respectively. The U.S. and Latin America operations market traditional life and health reinsurance, reinsurance of asset-intensive products, and financial reinsurance, primarily to large U.S. life insurance companies. The U.S. and Latin America operations include business generated by its offices in the U.S., Mexico and Brazil. The offices in Mexico and Brazil provide services to clients in other Latin American countries.

Traditional Reinsurance

The U.S. and Latin America Traditional segment provides individual and group life and health reinsurance to domestic clients for a variety of products through yearly renewable term agreements, coinsurance, and modified coinsurance. This business has been accepted under many different rate scales, with rates often tailored to suit the underlying product and the needs of the ceding company. Premiums typically vary for smokers and non-smokers, males and females, and may include a preferred underwriting class discount. Reinsurance premiums are paid in accordance with the treaty, regardless of the premium mode for the underlying primary insurance. This business is made up of facultative and automatic treaty business.

Automatic business is generated pursuant to treaties which generally require that the underlying policies meet the ceding company's underwriting criteria, although in certain cases such policies may be rated substandard. In contrast to facultative reinsurance, reinsurers do not engage in underwriting assessments of each risk assumed through an automatic treaty.

As the Company does not apply its underwriting standards to each policy ceded to it under automatic treaties, the U.S. and Latin America operations generally require ceding companies to retain a portion of the business written on an automatic basis, thereby increasing the ceding companies' incentives to underwrite risks with due care and, when appropriate, to contest claims diligently.

The U.S. and Latin America facultative reinsurance operation involves the assessment of the risks inherent in (i) multiple impairments, such as heart disease, high blood pressure, and diabetes; (ii) cases involving large policy face amounts; and (iii) financial risk cases (i.e. cases involving policies disproportionately large in relation to the financial characteristics of the proposed insured). The U.S. and Latin America operations' marketing efforts have focused on developing facultative relationships with client companies because management believes facultative reinsurance represents a substantial segment of the reinsurance activity of many large insurance companies and also serves as an effective means of expanding the U.S. and Latin America operations' automatic business. In 2016, 2015 and 2014, approximately 18.5%, 19.9%, and 19.9%, respectively, of the U.S. and Latin America gross premiums were written on a facultative basis.

Only a portion of approved facultative applications ultimately result in reinsurance, as applicants for impaired risk policies often submit applications to several primary insurers, which in turn seek facultative reinsurance from several reinsurers. Ultimately, only one insurance company and one reinsurer are likely to obtain the business. The Company tracks the percentage of declined and placed facultative applications on a client-by-client basis and generally works with clients to seek to maintain such percentages at levels deemed acceptable. As the Company applies its underwriting standards to each application submitted to it facultatively, it generally does not require ceding companies to retain a portion of the underlying risk when business is written on a facultative basis.

In addition, several of the Company's U.S. and Latin America clients have purchased life insurance policies insuring the lives of their executives. These policies have generally been issued to fund deferred compensation plans and have been reinsured with the Company. The Company's consolidated balance sheets included interest-sensitive contract liabilities of \$2.1 billion and \$2.2 billion and policy loans of \$1.4 billion and \$1.5 billion as of December 31, 2016 and 2015, respectively, associated with this business.

Financial Solutions - Asset-Intensive Reinsurance

The Company's U.S. and Latin America Asset-Intensive operations primarily concentrate on the investment risk within underlying annuities and corporate-owned life insurance policies. These reinsurance agreements are mostly structured as coinsurance, coinsurance with funds withheld, or modified coinsurance of primarily investment risk such that the Company recognizes profits or losses primarily from the spread between the investment earnings and the interest credited on the underlying

annuity contract liabilities. Reinsurance of such business was reflected in interest-sensitive contract liabilities of approximately \$10.8 billion and \$10.5 billion as of December 31, 2016 and 2015, respectively.

Annuities are normally limited by the size of the deposit from any single depositor. The Company also reinsures certain indexed annuities, variable annuity products that contain guaranteed minimum death or living benefits and corporate-owned life insurance products. Corporate-owned life insurance normally involves a large number of insureds associated with each deposit, and the Company's underwriting guidelines limit the size of any single deposit. The individual policies associated with any single deposit are typically issued within pre-set guaranteed issue parameters.

The Company primarily targets highly rated, financially secure companies as clients for asset-intensive business. These companies may wish to limit their own exposure to certain products. Ongoing asset/liability analysis is required for the management of asset-intensive business. The Company performs this analysis internally, in conjunction with asset/liability analysis performed by the ceding companies.

Financial Solutions - Financial Reinsurance

The Company's U.S. and Latin America Financial Reinsurance operations assist ceding companies in meeting applicable regulatory requirements while enhancing their financial strength and regulatory surplus position. The Company commits cash or assumes regulatory insurance liabilities from the ceding companies. In addition, the Company has committed to provide statutory reserve support to third-parties by funding loans if certain defined events occur. Generally, such amounts are offset by receivables from ceding companies that are repaid by the future profits from the reinsured block of business. The Company structures its financial reinsurance transactions so that the projected future profits of the underlying reinsured business significantly exceed the amount of regulatory surplus provided to the ceding company.

The Company primarily targets highly rated insurance companies for financial reinsurance due to the credit risk associated with this business. A careful analysis is performed before providing any regulatory surplus enhancement to the ceding company. This analysis is intended to ensure that the Company understands the risks of the underlying insurance product and that the transaction has a high likelihood of being repaid through the future profits of the underlying business. If the future profits of the business are not sufficient to repay the Company or if the ceding company becomes financially distressed and is unable to make payments under the treaty, the Company may incur losses. A staff of actuaries and accountants track experience for each treaty on a quarterly basis in comparison to models of expected results.

Customer Base

The U.S. and Latin America operations market life reinsurance primarily to the largest U.S. life insurance companies. The Company estimates that approximately 45 of the top 50 U.S. life insurance companies, based on premiums, are clients. The treaties underlying this business generally are terminable by either party on 90 days written notice, but only with respect to future new business. Existing business generally is not terminable, unless the underlying policies terminate or are recaptured. In 2016, the five largest clients generated approximately \$1.9 billion or 32.1% of U.S. and Latin America operation's gross premiums. In addition, 45 other clients each generated annual gross premiums of \$20.0 million or more, and the aggregate gross premiums from these clients represented approximately 58.8% of U.S. and Latin America operation's gross premiums. For the purpose of this disclosure, companies that are within the same insurance holding company structure are combined.

Canada Operations

The Canada operations represented 10.5%, 10.2%, and 11.2% of the Company's net premiums in 2016, 2015 and 2014, respectively. The Company operates in Canada primarily through RGA Canada. RGA Canada employs its own underwriting, actuarial, claims, pricing, accounting, systems, marketing and administrative staff in offices located in Montreal and Toronto.

Traditional Reinsurance

In 2016, the Canada Traditional Reinsurance segment assumed \$34.9 billion in new business, predominately representing recurring new business, as opposed to in force transactions. Approximately 79.4% of the 2016 recurring new business was written on an automatic basis.

RGA Canada is a leading life reinsurer in Canada, based on new individual life insurance production. It assists clients with capital management and mortality and morbidity risk management and is primarily engaged in individual life reinsurance, as well as creditor, group life and health, critical illness and disability reinsurance, through yearly renewable term and coinsurance agreements. Creditor insurance covers the outstanding balance on personal, mortgage or commercial loans in the event of death, disability or critical illness and is generally shorter in duration than individual life insurance.

The business is generally composed of facultative and automatic treaty business. Automatic business is generated pursuant to treaties which generally require that the underlying policies meet the ceding company's underwriting criteria, although in certain cases such policies may be rated substandard. In contrast to facultative reinsurance, reinsurers do not engage in underwriting assessments of each risk assumed through an automatic treaty.

RGA Canada generally requires ceding companies to retain a portion of the business written on an automatic basis, thereby increasing the ceding companies' incentives to underwrite risks with due care and, when appropriate, to contest claims diligently.

Facultative reinsurance involves the assessment of the risks from a medical and financial perspective. RGA Canada is recognized as a leader in facultative reinsurance, and this has served to maintain a strong market share on automatic business.

RGA Canada supports over half the companies active in the living benefits and in the group insurance markets. Solid claims management expertise and innovative product development capabilities support a growing share of these markets.

Financial Solutions

The Canada Financial Solutions segment concentrates on assisting clients with longevity risk transfer structures within underlying annuities and pension benefit obligations, and on assisting clients in meeting applicable regulatory requirements while enhancing their financial strength and regulatory surplus position through financial reinsurance structures.

Customer Base

Clients include most of the life insurers in Canada, although the number of life insurers is much smaller compared to the U.S. In 2016, the five largest clients generated approximately \$539.1 million or 53.7% of Canada operation's gross premiums. In addition, eight other clients each generated annual gross premiums of \$20.0 million or more, and the aggregate gross premiums from these clients represented approximately 36.0% of Canada operation's gross premiums. For the purpose of this disclosure, companies that are within the same insurance holding company structure are combined.

Europe, Middle East and Africa Operations

The Europe, Middle East and Africa ("EMEA") operations represented 14.3%, 15.1%, and 15.9% of the Company's net premiums in 2016, 2015 and 2014, respectively. This segment serves clients from subsidiaries, licensed branch offices and/or representative offices primarily located in France, Germany, Ireland, Italy, the Netherlands, Poland, South Africa, Spain, the United Arab Emirates ("UAE") and the United Kingdom ("UK").

EMEA's operations in the UK, Continental Europe and South Africa employ their own underwriting, actuarial, claims, pricing, accounting, marketing and administration staffs with additional support services provided by the Company's staff in the U.S. and Canada.

Traditional Reinsurance

The principal types of reinsurance for this segment include individual and group life and health, critical illness, disability and underwritten annuities. Premiums earned from the traditional reinsurance accounted for 86.3% of the total net premiums for the EMEA operations in 2016. Traditional reinsurance in the UK, South Africa and Italy consists predominantly of long term contracts, which are not terminable for existing risk without recapture or natural expiry, whereas in other markets within the region contracts are predominantly short term, renewing annually. The reinsurance agreements of critical illness coverage occurs primarily in the UK and South Africa and may be either facultative or automatic agreements. Premiums earned from critical illness coverage represented 17.8% of the total net premiums for this segment in 2016.

Financial Solutions

The principal types of reinsurance for this segment include longevity, asset-intensive and financial reinsurance. Longevity reinsurance takes the form of closed block annuity reinsurance and longevity swap structures. Premiums earned from financial solutions accounted for 13.7% of the total net premiums for the EMEA operations in 2016. Asset-intensive business for this segment consists of coinsurance of payout annuities. Future policy benefits and interest-sensitive contracts liabilities of approximately \$3.5 billion and \$4.0 billion as of December 31, 2016 and 2015, respectively, are associated with this business. Financial reinsurance assists ceding companies in meeting applicable regulatory requirements while enhancing their financial strength. These transactions do not qualify as reinsurance under U.S. GAAP, due to low risk nature of transactions and are reported in accordance with deposit accounting guidelines.

Customer Base

In 2016, the UK operations generated approximately \$972.6 million, or 67.7% of the segment's gross premiums. In 2016, the five largest clients generated approximately \$726.5 million or 50.6% of EMEA operation's gross premiums. In addition, 13 other clients each generated annual gross premiums of \$20.0 million or more, and the aggregate gross premiums from these clients represented approximately 27.1% of EMEA operation's gross premiums. For the purpose of this disclosure, companies that are within the same insurance holding company structure are combined.

Asia Pacific Operations

The Asia Pacific operations represented 18.2%, 18.3%, and 18.2% of the Company's net premiums in 2016, 2015 and 2014, respectively. The Company has a presence in the Asia Pacific region with licensed branch offices and/or representative offices in China, Hong Kong, India, Japan, Malaysia, New Zealand, Singapore, South Korea and Taiwan. The Company has also established a reinsurance subsidiary in Australia in January 1996.

The Asian offices provide full reinsurance services and are supported by the Company's U.S. and International Division Sydney offices. In addition, a regional team based in Hong Kong has been established in recent years to provide support to the Asian offices to accommodate business growth in the region. RGA Australia employs its own underwriting, actuarial, claims, pricing, accounting, systems, marketing, and administration service with additional support provided by the Company's U.S. and International Division Sydney offices.

Traditional Reinsurance

The principal types of reinsurance for the Traditional Reinsurance segment include individual and group life and health, critical illness, disability and superannuation through yearly renewable term and coinsurance agreements. The reinsurance of critical illness coverage provides a benefit in the event of the diagnosis of pre-defined critical illness. Disability reinsurance provides income replacement benefits in the event the policyholder becomes disabled due to accident or illness. Superannuation is the Australian government mandated compulsory retirement savings program. Superannuation funds accumulate retirement funds for employees, and, in addition, typically offer life and disability insurance coverage. Reinsurance agreements may be either facultative or automatic agreements covering primarily individual risks and, in some markets, group risks. Premiums earned from traditional reinsurance accounted for 99.7% of the total net premiums for the Asia Pacific operations in 2016. The reinsurance of critical illness coverage occurs primarily in South Korea, Australia and Hong Kong. Premiums earned from critical illness coverage represented 23.7% of the total net premiums for this segment in 2016.

Financial Solutions

The Financial Solutions segment includes financial reinsurance, asset-intensive and certain disability and life blocks. Financial reinsurance assists ceding companies in meeting applicable regulatory requirements while enhancing their financial strength. These transactions do not qualify as reinsurance under U.S. GAAP, due to low risk nature of transactions and are reported in accordance with deposit accounting guidelines. Asset-intensive business for this segment primarily concentrates on the investment risk within underlying annuities and life insurance policies. These reinsurance agreements are mostly structured to take on investment risk such that the Company recognizes profits or losses primarily from the spread between the investment earnings and the interest credited on the underlying annuity contract liabilities.

Customer Base

The Australian operations generated approximately \$592.8 million, or 34.1% of the total gross premiums for the Asia Pacific operations in 2016. In 2016, the five largest clients generated approximately \$666.7 million or 38.4% of Asia Pacific operation's gross premiums. In addition, 16 other clients each generated annual gross premiums of \$20.0 million or more, and the aggregate gross premiums from these clients represented approximately 38.9% of Asia Pacific operation's gross premiums. For the purpose of this disclosure, companies that are within the same insurance holding company structure are combined.

Corporate and Other

Corporate and Other operations include investment income from invested assets not allocated to support segment operations, proceeds from the Company's capital-raising efforts that have not been deployed and investment related gains or losses. Corporate expenses consist of the offset to capital charges allocated to the operating segments within the policy acquisition costs and other insurance income line item, unallocated overhead and executive costs, and interest expense related to debt. Additionally, Corporate and Other includes results associated with the Company's collateral finance and securitization notes and results from certain wholly-owned subsidiaries and joint ventures that, among other activities, develop and market technology solutions for the insurance industry.

D. Financial Information About Foreign Operations

The Company's foreign operations are primarily in Canada, the Asia Pacific region, Europe, and South Africa. Revenue, income (loss) before income taxes, which include investment related gains (losses), interest expense, depreciation and amortization, and identifiable assets attributable to these geographic regions are identified in Note 15 – "Segment Information" in the Notes to Consolidated Financial Statements. Although there are risks inherent to foreign operations, such as currency fluctuations and restrictions on the movement of funds, as described in Item 1A – "Risk Factors", the Company's financial position and results of operations have not been materially adversely affected thereby to date.

E. Available Information

Copies of the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports are available free of charge through the Company's website (www.rgare.com) as soon as reasonably practicable after the Company electronically files such reports with the Securities and Exchange Commission (www.sec.gov). Information provided on such websites does not constitute part of this Annual Report on Form 10-K.

Item 1A. RISK FACTORS

In the Risk Factors below, we refer to the Company as "we," "us," or "our." Investing in our securities involves certain risks. Any of the following risks could materially adversely affect our business, financial condition or results of operations. These risks are not exclusive, and additional risks to which we are subject include, but are not limited to, the factors mentioned under "Cautionary Note Regarding Forward-Looking Statements" in Item 7 below and the risks of our businesses described elsewhere in this Annual Report on Form 10-K. Many of these risks are interrelated and occur under similar business and economic conditions, and the occurrence of certain of them may in turn cause the emergence, or exacerbate the effect, of others. Such a combination could materially increase the severity of the impact on our business, liquidity, financial condition and results of operations.

Risks Related to Our Business

We make assumptions when pricing our products relating to mortality, morbidity, lapsation, investment returns and expenses, and significant deviations in experience could negatively affect our financial condition and results of operations.

Our life reinsurance contracts expose us to mortality risk, which is the risk that the level of death claims may differ from that which we assumed in pricing our reinsurance contracts. Some of our reinsurance contracts expose us to morbidity risk, which is the risk that the claims we pay in the event an insured person becomes critically ill or disabled differ from that which we assumed in pricing our reinsurance contracts. Our risk analysis and underwriting processes are designed with the objective of controlling the quality of the business and establishing appropriate pricing for the risks we assume. Among other things, these processes rely heavily on our underwriting, our analysis of mortality and morbidity trends, lapse rates, expenses and our understanding of medical impairments and their effect on mortality or morbidity.

We expect mortality, morbidity and lapse experience to fluctuate somewhat from period to period, but believe they should remain reasonably predictable over a period of many years. Mortality, morbidity or lapse experience that is less favorable than the rates that we used in pricing a reinsurance agreement may cause our net income to be less than otherwise expected because the premiums we receive for the risks we assume may not be sufficient to cover the claims and profit margin. Furthermore, even if the total benefits paid over the life of the contract do not exceed the expected amount, unexpected increases in the incidence of deaths or illness can cause us to pay more benefits in a given reporting period than expected, adversely affecting our net income in any particular reporting period. Likewise, adverse experience could impair our ability to offset certain unamortized deferred acquisition costs and adversely affect our net income in any particular reporting period. We perform annual tests to establish that deferred policy acquisition costs remain recoverable at all times. These tests require us to make a significant number of assumptions. If our financial performance significantly deteriorates to the point where a premium deficiency exists, a cumulative charge to current operations will be recorded which may adversely affect our net income in a particular reporting period.

We regularly review our reserves and associated assumptions as part of our ongoing assessment of our business performance and risks. If we conclude that our reserves are insufficient to cover actual or expected policy and contract benefits and claim payments as a result of changes in experience, assumptions or otherwise, we would be required to increase our reserves and incur charges in the period in which we make the determination. The amounts of such increases may be significant and this could materially adversely affect our financial condition and results of operations and may require us to generate or fund additional capital in our businesses.

Our financial condition and results of operations may also be adversely impacted if our actual investment returns and expenses differ from our pricing and reserve assumptions. Changes in economic conditions may lead to changes in market interest rates or changes in our investment strategies, either of which could cause our actual investment returns and expenses to differ from our pricing and reserve assumptions.

Our reinsurance subsidiaries are highly regulated, and changes in these regulations could negatively affect our business.

Our reinsurance subsidiaries are subject to government regulation in each of the jurisdictions in which they are licensed or authorized to do business. Governmental agencies have broad administrative power to regulate many aspects of the reinsurance business, which may include reinsurance terms and capital adequacy. These agencies are concerned primarily with the protection of policyholders and their direct insurers rather than shareholders or holders of debt securities of reinsurance companies. Moreover, insurance laws and regulations, among other things, establish minimum capital requirements and limit the amount of dividends, tax distributions and other payments our reinsurance subsidiaries can make without prior regulatory approval, and impose

restrictions on the amount and type of investments we may hold. The State of Missouri also regulates our reinsurance subsidiaries as members of an insurance holding company system. The regulation of our reinsurance subsidiaries in this way necessitates restrictions upon RGA as the ultimate parent of these entities.

Recently, insurance regulators have increased their scrutiny of insurance holding company systems in the U.S. Much of the additional scrutiny is on activities of the insurance company's entire group which includes the group's parent company and any non-insurance subsidiaries. While the laws have not extended regulation to RGA and its non-insurance subsidiaries, the manner in which the insurance regulators regulate our reinsurance subsidiaries is now influencing the activities of all other entities within the Company. Insurance Holding Company System Regulatory Acts in the U.S. now provide for an expanded supervision of insurance groups operating in the U.S. The scope includes a review of enterprise risk management programs as well as expanded review of agreements between licensed insurers and their group members. Missouri and California have each adopted these new standards as law.

At the U.S. federal level, the Dodd-Frank Wall Street Reform and Consumer Protection Act established a Financial Stability Oversight Council to identify financial institutions, including insurers and reinsurers that are systemically important to the U.S. financial system. A finding that RGA or one of our U.S. subsidiaries is systemically important could ultimately subject the identified entity to additional capital requirements based on business levels and asset mix and other supervision. Such additional scrutiny might also impact our ability to pay dividends. While we do not currently anticipate that the Financial Stability Oversight Council will find RGA or any of our U.S. subsidiaries to be systemically important, a few of our client insurance companies have been designated systemically important and we anticipate that more could receive such designation. Designation of our client insurance companies as systemically important could impact us through additional scrutiny of the client's reinsurance programs with us, including a consideration of the volume of business ceded by the insurer to us. Moreover, we cannot assure you that more stringent restrictions will not be adopted from time to time in other jurisdictions in which our reinsurance subsidiaries are domiciled, which could, under certain circumstances, significantly reduce or restrict dividends or other amounts payable to us by our subsidiaries unless they obtain approval from insurance regulatory authorities. We cannot predict the effect that any recommendations of the NAIC or proposed or future legislation or rule-making in the U.S. or elsewhere may have on our business, financial condition or results of operations.

Certain of our subsidiaries are subject to the Solvency II measures developed by the European Insurance and Occupational Pensions Authority and are required to abide by the evolving risk management practices, capital standards and disclosure requirements of the Solvency II framework. We may also be subject to similar solvency regulations in other regions, such as China and Japan. See "Regulation - International Regulation" in Item 1, Business. While we currently believe that the Solvency II requirements will be directly imposed only on our European Union domiciled entities, there can be no assurance at this time that Solvency II will not result in broader consequences to the Company.

A downgrade in our ratings or in the ratings of our reinsurance subsidiaries could adversely affect our ability to compete.

Our financial strength and credit ratings are important factors in our competitive position. Rating organizations periodically review the financial performance and condition of insurers, including our reinsurance subsidiaries. These ratings are based on an insurance company's ability to pay its obligations and are not directed toward the protection of investors. Rating organizations assign ratings based upon several factors. While most of the factors considered relate to the rated company, some of the factors relate to general economic conditions and circumstances outside the rated company's control. The various rating agencies periodically review and evaluate our capital adequacy in accordance with their established guidelines and capital models. In order to maintain our existing ratings, we may commit from time to time to manage our capital at levels commensurate with such guidelines and models. If our capital levels are insufficient to fulfill any such commitments, we could be required to reduce our risk profile by, for example, retroceding some of our business or by raising additional capital by issuing debt, hybrid or equity securities. Any such actions could have a material adverse impact on our earnings or materially dilute our shareholders' equity ownership interests.

Any downgrade in the ratings of our reinsurance subsidiaries could adversely affect their ability to sell products, retain existing business, and compete for attractive acquisition opportunities. The ability of our subsidiaries to write reinsurance partially depends on their financial condition and is influenced by their ratings. Ratings are subject to revision or withdrawal at any time by the assigning rating organization. A rating is not a recommendation to buy, sell or hold securities, and each rating should be evaluated independently of any other rating.

We believe that the rating agencies consider the financial strength and flexibility of a parent company and its consolidated operations when assigning a rating to a particular subsidiary of that company. A downgrade in the rating or outlook of RGA, among other factors, could adversely affect our ability to raise and then contribute capital to our subsidiaries for the purpose of facilitating their operations and growth. A downgrade could also increase our own cost of capital. For example, the facility fee and interest rate for our syndicated revolving credit facility are based on our senior long-term debt ratings. A decrease in those ratings could result in an increase in costs for that credit facility and others. Also, if there is a downgrade in the rating of RGA, or

any of our rated subsidiaries, some of our reinsurance contracts would either permit our client ceding insurers to terminate such reinsurance contracts or require us to post collateral to secure our obligations under these reinsurance contracts. Accordingly, we believe a ratings downgrade of RGA, or any of our rated subsidiaries, could have a negative effect on our ability to conduct business.

We cannot assure you that actions taken by ratings agencies would not result in a material adverse effect on our business, financial condition or results of operations. In addition, it is unclear what effect, if any, a ratings change would have on the price of our securities in the secondary market.

The availability and cost of collateral, including letters of credit, asset trusts and other credit facilities, as well as regulatory changes relating to the use of captive insurance companies, could adversely affect our business, financial condition or results of operations.

Regulatory reserve requirements in various jurisdictions in which we operate may be significantly higher than the reserves required under GAAP. Accordingly, we reinsure, or retrocede, business to affiliated and unaffiliated reinsurers to reduce the amount of regulatory reserves and capital we are required to hold in certain jurisdictions, including the U.S. and the UK.

A regulation in the U.S., commonly referred to as Regulation XXX, requires a relatively high level of regulatory, or statutory, reserves that U.S. life insurance and life reinsurance companies must hold on their statutory financial statements for various types of life insurance business, primarily certain level term life products. The reserve levels required under Regulation XXX increase over time and are normally in excess of reserves required under GAAP. The degree to which these reserves will increase and the ultimate level of reserves will depend upon the mix of our business and future production levels in the U.S. Based on the assumed rate of growth in our current business plan, and the increasing level of regulatory reserves associated with some of this business, we expect the amount of our required regulatory reserves to grow significantly.

In order to reduce the effect of Regulation XXX, our principal U.S. operating subsidiary, RGA Reinsurance Company, has retroceded Regulation XXX-related reserves to affiliated and unaffiliated reinsurers, including affiliated insurers governed by captive insurance laws. Additionally, some of our reinsurance subsidiaries in foreign jurisdictions enter into various reinsurance arrangements with affiliated and unaffiliated reinsurers from time to time in order to reduce statutory capital and reserve requirements.

State insurance regulators have been scrutinizing the use of captive reinsurers to satisfy certain reserve requirements. The NAIC has analyzed the insurance industry's use of affiliated captive reinsurers to satisfy certain reserve requirements and has adopted measures to promote uniformity in both the approval and supervision of such reinsurers. New standards to address the use of captive reinsurers have been introduced. State insurance regulators that regulate our domestic reinsurance companies have placed restrictions on the use of such captive reinsurers which may make them less effective. Depending on how the new standards are ultimately applied and whether additional restrictions are introduced, our ability to reinsure certain products, maintain risk based capital ratios and deploy excess capital could be adversely affected. As a result, we may need to alter the type and volume of business we reinsure, increase prices on those products, raise additional capital to support higher regulatory reserves or implement higher cost strategies, all of which could adversely impact our competitive position and our financial condition and results of operations. We cannot estimate the impact of discontinuing or altering our captive strategy in response to potential regulatory changes due to many unknown variables such as the cost and availability of alternative capital, potential changes in regulatory reserve requirements under a principle-based reserving approach, changes in acceptable collateral for statutory reserves, the potential introduction of the concept of a "certified reinsurer" in the laws and regulations of certain jurisdictions where we operate, the potential for increased pricing of products offered by us and the potential change in the mix of products sold or offered by us or our clients.

As a general matter, for us to reduce regulatory reserves on business that we retrocede, the affiliated or unaffiliated reinsurer must provide an equal amount of regulatory-compliant collateral. Such collateral may be provided in the form of a letter of credit from a commercial bank, through the placement of assets in trust for our benefit, or through a capital markets securitization.

In connection with these reserve requirements, we face the following risks:

- The availability of collateral and the related cost of such collateral in the future could affect the type and volume of business we reinsure and could increase our costs.
- We may need to raise additional capital to support higher regulatory reserves, which could increase our overall cost of capital.
- If we, or our retrocessionaires, are unable to obtain or provide sufficient collateral to support our statutory ceded reserves, we may be required to increase regulatory reserves. In turn, this reserve increase could significantly reduce our statutory capital levels and adversely affect our ability to satisfy required regulatory capital levels, unless we are able to raise additional capital to contribute to our operating subsidiaries.

- Because term life insurance is a particularly price-sensitive product, any increase in insurance premiums charged on these products by life insurance companies, in order to compensate them for the increased statutory reserve requirements or higher costs of insurance they face, may result in a significant loss of volume in their life insurance operations, which could, in turn, adversely affect our life reinsurance operations.

We cannot assure you that we will be able to implement actions to mitigate the effect of increasing regulatory reserve requirements.

In addition, we maintain credit and letter of credit facilities with various financial institutions as a potential source of collateral and excess liquidity. Our ability to utilize these facilities is conditioned on our satisfaction of covenants and other requirements contained in the facilities. Our ability to utilize these facilities is also subject to the continued willingness and ability of the lenders to provide funds or issue letters of credit. Our failure to comply with the covenants in these facilities, or the failure of the lenders to meet their commitments, would restrict our ability to access these facilities when needed, adversely affecting our liquidity, financial condition and results of operations.

Changes in the equity markets, interest rates and volatility affect the profitability of variable annuities with guaranteed living benefits that we reinsure; therefore, such changes may have a material adverse effect on our business and profitability.

We reinsure variable annuity products that include guaranteed minimum living benefits. These include guaranteed minimum withdrawal benefits (“GMWB”), guaranteed minimum accumulation benefits (“GMAB”) and guaranteed minimum income benefits (“GMIB”). The amount of reserves related to these benefits is based on their fair value and is affected by changes in equity markets, interest rates and volatility. Accordingly, strong equity markets, increases in interest rates and decreases in volatility will generally decrease the fair value of the liabilities underlying the benefits.

Conversely, a decrease in the equity markets along with a decrease in interest rates and an increase in volatility will generally result in an increase in the fair value of the liabilities underlying the benefits, which increases the amount of reserves that we must carry. Such an increase in reserves would result in a charge to our earnings in the quarter in which we increase our reserves. We maintain a customized dynamic hedge program that is designed to mitigate the risks associated with income volatility around the change in reserves on guaranteed benefits. However, the hedge positions may not be effective to fully offset the changes in the carrying value of the guarantees due to, among other things, the time lag between changes in such values and corresponding changes in the hedge positions, high levels of volatility in the equity and derivatives markets, extreme swings in interest rates, contract holder behavior different than expected, and divergence between the performance of the underlying funds and hedging indices. These factors, individually or collectively, may have a material adverse effect on our liquidity, capital levels, financial condition or results of operations.

RGA is an insurance holding company, and our ability to pay principal, interest and dividends on securities is limited.

RGA is an insurance holding company, with our principal assets consisting of the stock of our reinsurance company subsidiaries, and substantially all of our income is derived from those subsidiaries. Our ability to pay principal and interest on any debt securities or dividends on any preferred or common stock depends, in part, on the ability of our reinsurance company subsidiaries, our principal sources of cash flow, to declare and distribute dividends or advance money to RGA. We are not permitted to pay common stock dividends or make payments of interest or principal on securities which rank equal or junior to our subordinated debentures and junior subordinated debentures, until we pay any accrued and unpaid interest on such debentures. Our reinsurance company subsidiaries are subject to various statutory and regulatory restrictions, applicable to insurance companies generally, that limit the amount of cash dividends, loans and advances that those subsidiaries may pay to us. Covenants contained in certain of our debt agreements also restrict the ability of certain subsidiaries to pay dividends and make other distributions or loans to us. In addition, we cannot assure you that more stringent dividend restrictions will not be adopted, as discussed above under “Our reinsurance subsidiaries are highly regulated, and changes in these regulations could negatively affect our business.”

As a result of our insurance holding company structure, in the event of the insolvency, liquidation, reorganization, dissolution or other winding-up of one of our reinsurance subsidiaries, all creditors of that subsidiary would be entitled to payment in full out of the assets of such subsidiary before we, as shareholder, would be entitled to any payment. Our subsidiaries would have to pay their direct creditors in full before our creditors, including holders of common stock, preferred stock or debt securities of RGA, could receive any payment from the assets of such subsidiaries.

We are exposed to foreign currency risk.

We are a multi-national company with operations in numerous countries and, as a result, are exposed to foreign currency risk to the extent that exchange rates of foreign currencies are subject to adverse change over time. The U.S. dollar value of our net investments in foreign operations, our foreign currency transaction settlements and the periodic conversion of the foreign-denominated earnings to U.S. dollars (our reporting currency) are each subject to adverse foreign exchange rate movements. A significant portion of our revenues and our fixed maturity securities available for sale are denominated in currencies other than

the U.S. dollar. We use foreign-denominated revenues and investments to fund foreign-denominated expenses and liabilities when possible to mitigate exposure to foreign currency fluctuations.

Our international operations involve inherent risks.

A significant portion of our net premiums come from our operations outside of the U.S. One of our strategies is to grow these international operations. International operations subject us to various inherent risks. In addition to the regulatory and foreign currency risks identified above, other risks include the following:

- managing the growth of these operations effectively, particularly given the recent rates of growth;
- changes in mortality and morbidity experience and the supply and demand for our products that are specific to these markets and that may be difficult to anticipate;
- political and economic instability in the regions of the world where we operate;
- uncertainty arising out of foreign government sovereignty over our international operations; and
- potentially uncertain or adverse tax consequences, including the repatriation of earnings from our non-U.S. subsidiaries.

Some of our international operations are in emerging markets where these risks are heightened and we anticipate that we will continue to do business in such markets. Our pricing assumptions may be less predictable in emerging markets, and deviations in actual experience from these assumptions could impact our profitability in these markets. Additionally, lack of legal certainty and stability in the emerging markets exposes us to increased risk of disruption and adverse or unpredictable actions by regulators and may make it more difficult for us to enforce our contracts, which may negatively impact our business.

On June 23, 2016, the UK held a referendum in which voters approved an exit from the European Union (“EU”), commonly referred to as “Brexit”. As a result of this referendum, it is expected that the British government will negotiate with the EU the terms under which it would ultimately leave participation in the EU and the nature of the future relationship between the UK and the EU. Although it is unknown what those terms might be, it is possible that there will be greater restrictions, requirements and regulatory complexities on reinsurance provided in the UK by entities located outside of the UK. These changes may adversely affect our business, financial condition or results of operations.

We cannot assure you that we will be able to manage the risks associated with our international operations effectively or that they will not have an adverse effect on our business, financial condition or results of operations.

We depend on the performance of others, and their failure to perform in a satisfactory manner would negatively affect us.

In the normal course of business, we seek to limit our exposure to losses from our reinsurance contracts by ceding a portion of the reinsurance to other insurance enterprises or retrocessionaires. We cannot assure you that these insurance enterprises or retrocessionaires will be able to fulfill their obligations to us. As of December 31, 2016, the retrocession pool members participating in our excess retention pool that have been reviewed by A.M. Best Company, were rated “A-”, the fourth highest rating out of sixteen possible ratings, or better. We are also subject to the risk that our clients will be unable to fulfill their obligations to us under our reinsurance agreements with them.

We rely upon our insurance company clients to provide timely, accurate information. We may experience volatility in our earnings as a result of erroneous or untimely reporting from our clients. We work closely with our clients and monitor their reporting to minimize this risk. We also rely on original underwriting decisions made by our clients. We cannot assure you that these processes or those of our clients will adequately control business quality or establish appropriate pricing.

For some reinsurance agreements, the ceding company withholds and legally owns and manages assets equal to the net statutory reserves, and we reflect these assets as funds withheld at interest on our balance sheet. In the event that a ceding company was to become insolvent, we would need to assert a claim on the assets supporting our reserve liabilities. We attempt to mitigate our risk of loss by offsetting amounts for claims or allowances that we owe the ceding company with amounts that the ceding company owes to us. We are subject to the investment performance on the withheld assets, although we do not directly control them. We help to set, and monitor compliance with, the investment guidelines followed by these ceding companies. However, to the extent that such investment guidelines are not appropriate, or to the extent that the ceding companies do not adhere to such guidelines, our risk of loss could increase, which could materially adversely affect our financial condition and results of operations. For additional information on funds withheld at interest, see “Investments-Funds Withheld at Interest” in Management’s Discussion and Analysis of Financial Condition and Results of Operations.

We use the services of third-party investment managers to manage certain assets where our investment management expertise is limited. We rely on these investment managers to provide investment advice and execute investment transactions that are within our investment policy guidelines. Poor performance on the part of our outside investment managers could negatively affect our financial performance.

As with all financial services companies, our ability to conduct business depends on consumer confidence in the industry and our financial strength. Actions of competitors, and financial difficulties of other companies in the industry, and related adverse publicity, could undermine consumer confidence and harm our reputation and business.

Natural and man-made disasters, catastrophes and events, including terrorist attacks, epidemics and pandemics, could adversely affect our business, financial condition and results of operations.

Natural disasters and terrorist attacks, as well as epidemics and pandemics, can adversely affect our business, financial condition and results of operations because they exacerbate mortality and morbidity risk. Terrorist attacks on the U.S. and in other parts of the world and the threat of future attacks could have a negative effect on our business.

We believe our reinsurance programs are sufficient to reasonably limit our net losses for individual life claims relating to potential future natural disasters and terrorist attacks. However, the consequences of natural disasters, terrorist attacks, armed conflicts, epidemics and pandemics are unpredictable, and we may not be able to foresee events that could have an adverse effect on our business.

We operate in a competitive industry which could adversely affect our market share.

The reinsurance industry is highly competitive, and we encounter significant competition in all lines of business from other reinsurance companies, as well as competition from other providers of financial services. Our competitors vary by geographic market, and many of our competitors have greater financial resources than we do. Our ability to compete depends on, among other things, pricing and other terms and conditions of reinsurance agreements, our ability to maintain strong financial strength ratings from rating agencies, and our service and experience in the types of business that we underwrite. Competition from other reinsurers could adversely affect our competitive position.

We compete based on the strength of our underwriting operations, insights on mortality trends based on our large book of business, and responsive service. We believe our quick response time to client requests for individual underwriting quotes and our underwriting expertise are important elements to our strategy and lead to other business opportunities with our clients. Our business will be adversely affected if we are unable to maintain these competitive advantages.

Tax law changes or a prolonged economic downturn could reduce the demand for insurance products, which could adversely affect our business.

Under the U.S. Internal Revenue Code, income tax payable by policyholders on investment earnings is deferred during the accumulation period of some life insurance and annuity products. To the extent that the U.S. Internal Revenue Code is revised to reduce benefits associated with the tax-deferred status of life insurance and annuity products, or to increase the tax-deferred status of competing products, all life insurance companies would be adversely affected with respect to their ability to sell such products, and, depending on grandfathering provisions, by the surrenders of existing annuity contracts and life insurance policies. In addition, life insurance products are often used to fund estate tax obligations. The estate tax provisions of the U.S. Internal Revenue Code have been revised frequently in the past. If Congress adopts legislation in the future to reduce or eliminate the estate tax, our U.S. life insurance company customers could face reduced demand for some of their life insurance products, which in turn could negatively affect our reinsurance business. We cannot predict whether any tax legislation impacting corporate taxes or insurance products will be enacted, what the specific terms of any such legislation will be or whether any such legislation would have a material adverse effect on our business, financial condition and results of operations.

A general economic downturn or a downturn in the capital markets could adversely affect the market for many life insurance and annuity products. Factors such as consumer spending, business investment, government spending, the volatility and strength of the capital markets, deflation and inflation affect the economic environment and thus the profitability of our business. An economic downturn may yield higher unemployment and lower family income, corporate earnings, business investment and consumer spending, and could result in decreased demand for life insurance and annuity products. Because we obtain substantially all of our revenues through reinsurance arrangements that cover a portfolio of life insurance products and annuities, our business would be harmed if the market for annuities or life insurance was adversely affected. Therefore, adverse changes in the economy could adversely affect our business, financial condition and results of operations.

Acquisitions and significant transactions involve varying degrees of risk that could affect our profitability.

We have made, and may in the future make, strategic acquisitions, either of selected blocks of business or other companies. The success of these acquisitions depends on, among other factors, our ability to appropriately price the acquired business. Additionally, acquisitions may expose us to operational challenges and various risks, including:

- the ability to integrate the acquired business operations and data with our systems;
- the availability of funding sufficient to meet increased capital needs;

- the ability to fund cash flow shortages that may occur if anticipated revenues are not realized or are delayed, whether by general economic or market conditions or unforeseen internal difficulties; and
- the possibility that the value of investments acquired in an acquisition may be lower than expected or may diminish due to credit defaults or changes in interest rates and that liabilities assumed may be greater than expected (due to, among other factors, less favorable than expected mortality or morbidity experience).

A failure to successfully manage the operational challenges and risks associated with or resulting from significant transactions, including acquisitions, could adversely affect our business, financial condition or results of operations.

Our risk management policies and procedures could leave us exposed to unidentified or unanticipated risk, which could negatively affect our business, financial condition or results of operations.

Our risk management policies and procedures, designed to identify, monitor and manage both internal and external risks, may not adequately predict future exposures, which could be significantly greater than expected. In addition, these identified risks may not be the only risks facing us. Additional risks and uncertainties not currently known to us, or that we currently deem to be immaterial, may adversely affect our business, financial condition or results of operations.

The failure in cyber or other information security systems, as well as the occurrence of unanticipated events affecting our disaster recovery systems and business continuity planning, could impair our ability to conduct business effectively.

Our business is highly dependent upon the effective operation of our computer systems. We rely on these systems for a variety of business functions across our global operations, including for the administration of our business, underwriting, claims, performing actuarial analyses and maintaining financial records. While we maintain liability insurance for cybersecurity and network interruption losses, our insurance may not be sufficient to protect us against all losses.

We depend heavily upon computer systems to provide reliable service, data and reports. In the event of a disaster such as a natural catastrophe, epidemic, industrial accident, blackout, computer virus, terrorist attack or war, unanticipated problems with our disaster recovery systems could have a material adverse impact on our ability to conduct business and on our financial condition and results of operations, particularly if those problems affect our computer-based data processing, transmission, storage and retrieval systems and destroy valuable data. In addition, if a significant number of our managers were unavailable in the event of a disaster, our ability to effectively conduct business could be severely compromised. These interruptions also may interfere with our clients' ability to provide data and other information to us, and our employees' ability to perform their job responsibilities.

The failure of our computer systems or disaster recovery capabilities for any reason could cause significant interruptions in our operations and result in a failure to maintain security, confidentiality or privacy of sensitive or personal data, related to our customers, insured individuals or our employees. Like other global companies, we have experienced threats to our data and systems from time to time. However, we have not detected or identified any evidence to indicate we have experienced a material breach of cyber security. Administrative and technical controls, security measures and other preventative actions we take to reduce the risk of such incidents and protect our information technology may not be sufficient to prevent physical and electronic break-ins, and similar disruptions from unauthorized tampering with our computer systems. Such a failure could harm our reputation, subject us to regulatory sanctions and legal claims, lead to loss of customers and revenues and otherwise adversely affect our business, financial condition or results of operations.

Managing key employee retention and succession is critical to our success.

Our success depends in large part upon our ability to identify, hire, retain and motivate highly skilled employees. We would be adversely affected if we fail to adequately plan for the succession of our senior management and other key employees. While we have succession plans and long-term compensation plans designed to retain our employees, our succession plans may not operate effectively and our compensation plans cannot guarantee that the services of these employees will continue to be available to us.

Risks Related to Our Investments

Adverse capital and credit market conditions may significantly affect our ability to meet liquidity needs, access to capital and cost of capital.

The capital and credit markets experience varying degrees of volatility and disruption. In some periods, the markets have exerted downward pressure on availability of liquidity and credit capacity for certain issuers.

We need liquidity to pay our operating expenses, interest on our debt and dividends on our capital stock and to replace certain maturing liabilities. Without sufficient liquidity, we will be forced to curtail our operations, and our business will be adversely affected. The principal sources of our liquidity are reinsurance premiums under reinsurance treaties and cash flows from our investment portfolio and other assets. Sources of liquidity in normal markets also include proceeds from the issuance of a

variety of short- and long-term instruments, including medium- and long-term debt, subordinated and junior subordinated debt securities, capital securities and common stock.

In the event current resources do not satisfy our needs, we may have to seek additional financing. The availability of additional financing will depend on a variety of factors such as market conditions, the general availability of equity and credit, the volume of trading activities, the overall availability of credit to the financial services industry, our credit ratings and credit capacity, as well as the possibility that customers or lenders could develop a negative perception of our long- or short-term financial prospects. Similarly, our access to funds may be impaired if regulatory authorities or rating agencies take negative actions against us. Our internal sources of liquidity may prove to be insufficient, and in such case, we may not be able to successfully obtain additional financing on favorable terms, or at all.

Disruptions, uncertainty or volatility in the capital and credit markets may also limit our access to capital required to operate our business, most significantly our reinsurance operations. Such market conditions may limit our ability to replace maturing liabilities in a timely manner, satisfy statutory capital requirements, generate fee income and market-related revenue to meet liquidity needs and access the capital necessary to grow our business. As such, we may be forced to delay raising capital, issue shorter tenor securities than we prefer, or bear an unattractive cost of capital which could decrease our profitability and significantly reduce our financial flexibility. Further, our ability to finance our statutory reserve requirements depends on market conditions. If market capacity is limited for a prolonged period of time, our ability to obtain new funding for such purposes may be hindered and, as a result, our ability to write additional business in a cost-effective manner may be limited or otherwise adversely affected.

Difficult conditions in the global capital markets and the economy generally may materially adversely affect our business, financial condition and results of operations.

Our results of operations, financial condition, cash flows and statutory capital position are materially affected by conditions in the global capital markets and the economy generally, both in the U.S. and elsewhere around the world. Poor economic conditions, volatility and disruptions in capital markets or financial asset classes can have an adverse effect on our business because our investment portfolio and some of our liabilities are sensitive to changing market factors. Additionally, disruptions in one market or asset class can also spread to other markets or asset classes.

Concerns over U.S. fiscal policy and the trajectory of the U.S. national debt could have severe repercussions to the U.S. and global credit and financial markets, further exacerbate concerns over sovereign debt and disrupt economic activity in the U.S. and elsewhere. As a result, our access to, or cost of, liquidity may deteriorate. As a result of uncertainty regarding U.S. national debt, the market value of some of our investments may decrease, and our capital adequacy could be adversely affected. Further downgrades, together with the sustained current trajectory of the U.S. national debt, could have adverse effects on our business, financial condition and results of operations.

Past economic uncertainties and weakness and disruption of the financial markets around the world, such as the solvency of certain European Union member states and of financial institutions that have significant direct or indirect exposure to debt issued by such countries, have led to concerns over capital markets access. In addition, there has been recent volatility within certain emerging market countries spurred by concerns over the potential for rising U.S. interest rates, slowing global growth, lower prices for oil and other commodities and the devaluation of certain currencies. These events and continuing market upheavals may have an adverse effect on us, in part because we have a large investment portfolio and are also dependent upon customer behavior. Our revenues may decline in such circumstances and our profit margins may erode. In addition, in the event of extreme prolonged market events, such as the global credit crisis, we could incur significant investment-related losses. Even in the absence of a market downturn, we are exposed to substantial risk of loss due to market volatility.

If our investment strategy is unsuccessful, we could suffer losses.

The success of our investment strategy is crucial to the success of our business. In particular, we structure our investments to match our anticipated liabilities under reinsurance treaties to the extent we believe necessary. If our calculations with respect to these reinsurance liabilities are incorrect, or if we improperly structure our investments to match such liabilities, we could be forced to liquidate investments prior to maturity at a significant loss.

Our investment guidelines permit us to invest up to 10% of our investment portfolio in non-investment grade fixed maturity securities. Those guidelines also permit us to make and invest in commercial mortgage loans. While any investment carries some risk, the risks associated with lower-rated securities are greater than the risks associated with investment grade securities. The risk of loss of principal or interest through default is greater because lower-rated securities are usually unsecured and are often subordinated to an issuer's other obligations. Additionally, the issuers of these securities frequently have relatively high debt levels and are thus more sensitive to difficult economic conditions, specific corporate developments and rising interest rates, which could impair an issuer's capacity or willingness to meet its financial commitment on such lower-rated securities. As a result, the market price of these securities may be quite volatile, and the risk of loss is greater.

The success of any investment activity is affected by general economic conditions, including the level and volatility of interest rates and the extent and timing of investor participation in such markets, which may adversely affect the markets for interest rate sensitive securities, mortgages and equity securities. Unexpected volatility or illiquidity in the markets in which we directly or indirectly hold positions could adversely affect us.

Interest rate fluctuations could negatively affect the income we derive from the difference between the interest rates we earn on our investments and interest we pay under our reinsurance contracts.

Significant changes in interest rates expose reinsurance companies to the risk of reduced investment income or actual losses based on the difference between the interest rates earned on investments and the credited interest rates paid on outstanding reinsurance contracts. Both rising and declining interest rates can negatively affect the income we derive from these interest rate spreads. During periods of rising interest rates, we may be contractually obligated to reimburse our clients for the greater amounts they credit on certain interest-sensitive products. However, we may not have the ability to immediately acquire investments with interest rates sufficient to offset the increased crediting rates on our reinsurance contracts. During periods of falling interest rates, our investment earnings will be lower because new investments in fixed maturity securities will likely bear lower interest rates. We may not be able to fully offset the decline in investment earnings with lower crediting rates on underlying annuity products related to certain of our reinsurance contracts. Our asset/liability management programs and procedures may not reduce the volatility of our income when interest rates are rising or falling, and thus we cannot assure you that changes in interest rates will not affect our interest rate spreads.

Changes in interest rates may also affect our business in other ways. Higher interest rates may result in increased surrenders on interest-based products of our clients, which may affect our fees and earnings on those products. Lower interest rates may result in lower sales of certain insurance and investment products of our clients, which would reduce the demand for our reinsurance of these products. If interest rates remain low for an extended period of time, it may adversely affect our cash flows, financial condition and results of operations.

The liquidity and value of some of our investments may become significantly diminished.

We hold certain investments that may lack liquidity, such as privately placed fixed maturity securities, mortgage loans, policy loans and real estate equity. If we require significant amounts of cash on short notice in excess of normal cash requirements or are required to post or return collateral in connection with our investment portfolio, derivatives transactions or securities lending activities, we may have difficulty selling these investments in a timely manner, be forced to sell them for less than we otherwise would have been able to realize, or both.

We could be forced to sell investments at a loss to cover policyholder withdrawals, recaptures of reinsurance treaties or other events.

Some of the products offered by our insurance company customers allow policyholders and contract holders to withdraw their funds under defined circumstances. Our reinsurance subsidiaries manage their liabilities and configure their investment portfolios so as to provide and maintain sufficient liquidity to support anticipated withdrawal demands and contract benefits and maturities under reinsurance treaties with these customers. While our reinsurance subsidiaries own a significant amount of liquid assets, a portion of their assets are relatively illiquid. Unanticipated withdrawal or surrender activity could, under some circumstances, require our reinsurance subsidiaries to dispose of assets on unfavorable terms, which could have an adverse effect on us. Reinsurance agreements may provide for recapture rights on the part of our insurance company customers. Recapture rights permit these customers to reassume all or a portion of the risk formerly ceded to us after an agreed-upon time, usually ten years, subject to various conditions.

Recapture of business previously ceded does not affect premiums ceded prior to the recapture, but may result in immediate payments to our insurance company customers and a charge to income for costs that we deferred when we acquired the business but are unable to recover upon recapture. Under some circumstances, payments to our insurance company customers could require our reinsurance subsidiaries to dispose of assets on unfavorable terms.

The defaults or deteriorating credit of other financial institutions could adversely affect us.

We have exposure to many different industries and counterparties, and routinely execute transactions with counterparties in the financial services industry, including brokers and dealers, insurance companies, commercial banks, investment banks, investment funds and other institutions. Many of these transactions expose us to credit risk in the event of default of our counterparty. In addition, with respect to secured and other transactions that provide for us to hold collateral posted by the counterparty, our credit risk may be exacerbated when the collateral we hold cannot be liquidated at prices sufficient to recover the full amount of our exposure. We also have exposure to these financial institutions in the form of unsecured debt instruments, derivative transactions

and equity investments. There can be no assurance that losses or impairments to the carrying value of these assets would not materially and adversely affect our business, financial condition or results of operations.

Defaults on our mortgage loans and volatility in performance may adversely affect our profitability.

Our mortgage loans face default risk and are principally collateralized by commercial properties. Mortgage loans are stated on our balance sheet at unpaid principal balance, adjusted for any unamortized premium or discount, deferred fees or expenses, and are net of valuation allowances. We establish valuation allowances for estimated impairments as of the balance sheet date. Such valuation allowances are based on the excess carrying value of the loan over the present value of expected future cash flows discounted at the loan's original effective interest rate, the value of the loan's collateral if the loan is in the process of foreclosure or is otherwise collateral-dependent, or the loan's market value if the loan is being sold. The performance of our mortgage loan investments, however, may fluctuate in the future. An increase in the default rate of our mortgage loan investments could have a material adverse effect on our financial condition or results of operations.

Further, any geographic or sector concentration of our mortgage loans may have adverse effects on our investment portfolios and consequently on our consolidated results of operations or financial condition. While we seek to mitigate this risk by having a broadly diversified portfolio, events or developments that have a negative effect on any particular geographic region or sector may have a greater adverse effect on the investment portfolios to the extent that the portfolios are concentrated. Moreover, our ability to sell assets relating to such particular groups of related assets may be limited if other market participants are seeking to sell at the same time.

Our valuation of fixed maturity and equity securities and derivatives include methodologies, estimations and assumptions that are subject to differing interpretations and could result in changes to investment valuations that may have a material adverse effect on our financial condition or results of operations.

Fixed maturity, equity securities and short-term investments, which are primarily reported at fair value on the consolidated balance sheets, represent the majority of our total cash and invested assets. We have categorized these securities into a three-level hierarchy, based on the priority of the inputs to the respective valuation technique. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). An asset or liability's classification within the fair value hierarchy is based on the lowest level of significant input to its valuation. For example, a Level 3 fair value measurement may include inputs that are observable (Levels 1 and 2) and unobservable (Level 3). Therefore, gains and losses for such assets and liabilities categorized within Level 3 may include changes in fair value that are attributable to both observable market inputs (Levels 1 and 2) and unobservable market inputs (Level 3).

The determination of fair values in the absence of quoted market prices is based on: (i) valuation methodologies; (ii) securities we deem to be comparable; and (iii) assumptions deemed appropriate based on market conditions specific to the security. The fair value estimates are made at a specific point in time, based on available market information and judgments about assets and liabilities, including estimates of the timing and amounts of expected future cash flows and the credit standing of the issuer or counterparty. Factors considered in estimating fair value include: coupon rate, maturity, estimated duration, call provisions, sinking fund requirements, credit rating, industry sector of the issuer, and quoted market prices of comparable securities. The use of different methodologies and assumptions may have a material effect on the estimated fair value amounts.

During periods of market disruption, including periods of significantly rising or high interest rates, rapidly widening credit spreads or illiquidity, it may be difficult to value certain of our securities if trading becomes less frequent or market data becomes less observable. There may be certain asset classes that were in active markets with significant observable data that become illiquid due to the financial environment. In such cases, more securities may fall to Level 3 and thus require more subjectivity and management judgment. As such, valuations may include inputs and assumptions that are less observable or require greater estimation as well as valuation methods that are more sophisticated or require greater estimation thereby resulting in values that may be different than the value at which the investments may be ultimately sold. Further, rapidly changing or disruptive credit and equity market conditions could materially impact the valuation of securities as reported within our consolidated financial statements and the period-to-period changes in value could vary significantly. Decreases in value may have a material adverse effect on our financial condition or results of operations.

The reported value of our relatively illiquid types of investments, our investments in the asset classes described in the paragraph above and, at times, our high-quality, generally liquid asset classes, do not necessarily reflect the lowest current market price for the asset. If we were forced to sell certain of our assets in disruptive or volatile market conditions, there can be no assurance that we will be able to sell them for the prices at which we have recorded them and we may be forced to sell them at significantly lower prices.

The determination of the amount of allowances and impairments taken on our investments is highly subjective and could materially affect our financial condition or results of operations.

The determination of the amount of allowances and impairments vary by investment type and is based upon our periodic evaluation and assessment of known and inherent risks associated with the respective asset class. Such evaluations and assessments are revised as conditions change and new information becomes available. Management updates its evaluations regularly and reflects changes in allowances and impairments in operations as such evaluations are revised.

For example, the cost of our fixed maturity and equity securities is adjusted for impairments in value deemed to be other-than-temporary in the period in which the determination is made. The assessment of whether impairments have occurred is based on management's case-by-case evaluation of the underlying reasons for the decline in fair value. Our management considers a wide range of factors about the security issuer and uses their best judgment in evaluating the cause of the decline in the estimated fair value of the security and in assessing the prospects for near-term recovery. Inherent in management's evaluation of the security are assumptions and estimates about the operations of the issuer and its future earnings potential. There can be no assurance that our management has accurately assessed the level of impairments taken, or allowances reflected in our financial statements and their potential impact on regulatory capital. Furthermore, additional impairments or additional allowances may be needed in the future.

Defaults, downgrades or other events impairing the value of our fixed maturity securities portfolio may reduce our earnings.

We are subject to the risk that the issuers, or guarantors, of fixed maturity securities we own may default on principal and interest payments they owe us. Fixed maturity securities represent a substantial portion of our total cash and invested assets. The occurrence of a major economic downturn (or a prolonged downturn in the economy), acts of corporate malfeasance, widening risk spreads, or other events that adversely affect the issuers or guarantors of these securities could cause the value of our fixed maturity securities portfolio and our net income to decline and the default rate of the fixed maturity securities in our investment portfolio to increase. A ratings downgrade affecting issuers or guarantors of particular securities, or similar trends that could worsen the credit quality of issuers, such as the corporate issuers of securities in our investment portfolio, could also have a similar effect. With economic uncertainty, credit quality of issuers or guarantors could be adversely affected. Any event reducing the value of these securities other than on a temporary basis could have a material adverse effect on our business, financial condition or results of operations.

Our investments are reflected within the consolidated financial statements utilizing different accounting bases and accordingly we may not have recognized differences, which may be significant, between cost and fair value in our consolidated financial statements.

Our principal investments are in fixed maturity and equity securities, short-term investments, mortgage loans, policy loans, funds withheld at interest and other invested assets. The carrying value of such investments is as follows:

- Fixed maturity and equity securities are classified as available-for-sale and are reported at their estimated fair value. Unrealized investment gains and losses on these securities are recorded as a separate component of accumulated other comprehensive income or loss, net of related deferred acquisition costs and deferred income taxes.
- Short-term investments include investments with remaining maturities of one year or less, but greater than three months, at the time of acquisition and are stated at amortized cost, which approximates fair value.
- Mortgage and policy loans are stated at unpaid principal balance. Additionally, mortgage loans are adjusted for any unamortized premium or discount, deferred fees or expenses, net of valuation allowances.
- Funds withheld at interest represent amounts contractually withheld by ceding companies in accordance with reinsurance agreements. The value of the assets withheld and interest income are recorded in accordance with specific treaty terms.
- We use the cost method of accounting for investments in real estate joint ventures and other limited partnership interests in which we have a minor equity investment and virtually no influence over the joint ventures or the partnership's operations. The equity method of accounting is used for investments in real estate joint ventures and other limited partnership interests in which we have significant influence over the operating and financing decisions but are not required to be consolidated. These investments are reflected in other invested assets on the consolidated balance sheets.

Investments not carried at fair value in our consolidated financial statements — principally, mortgage loans, policy loans, real estate joint ventures and other limited partnerships — may have fair values that are substantially higher or lower than the carrying value reflected in our consolidated financial statements. Each of such asset classes is regularly evaluated for impairment under the accounting guidance appropriate to the respective asset class.

Risks Related to Ownership of Our Common Stock

We may not pay dividends on our common stock.

Our shareholders may not receive future dividends. Historically, we have paid quarterly dividends ranging from \$0.027 per share in 1993 to \$0.41 per share in 2016. All future payments of dividends, however, are at the discretion of our board of directors and will depend on our earnings, capital requirements, insurance regulatory conditions, operating conditions and such other factors as our board of directors may deem relevant. The amount of dividends that we can pay will depend in part on the operations of our reinsurance subsidiaries. Under certain circumstances, we may be contractually prohibited from paying dividends on our common stock due to restrictions associated with certain of our debt securities.

Certain provisions in our articles of incorporation and bylaws, and in Missouri law, may delay or prevent a change in control which could adversely affect the price of our common stock.

Certain provisions in our articles of incorporation and bylaws, as well as Missouri corporate law and state insurance laws, may delay or prevent a change of control of RGA, which could adversely affect the price of our common stock. Our articles of incorporation and bylaws contain some provisions that may make the acquisition of control of RGA without the approval of our board of directors more difficult, including provisions relating to the nomination, election and removal of directors, the structure of the board of directors and limitations on actions by our shareholders. In addition, Missouri law also imposes some restrictions on mergers and other business combinations between RGA and holders of 20% or more of our outstanding common stock.

These provisions may have unintended anti-takeover effects, including to delay or prevent a change in control of RGA, which could adversely affect the price of our common stock.

Applicable insurance laws may make it difficult to effect a change of control of RGA.

Before a person can acquire control of a U.S. insurance company, prior written approval must be obtained from the insurance commission of the state where the domestic insurer is domiciled. Missouri insurance laws and regulations as well as the insurance laws and regulations of California provide that no person may acquire control of us, and thus indirect control of our U.S. domiciled reinsurance subsidiaries, including RGA Reinsurance and Aurora National, unless:

- such person has provided certain required information to the domiciliary state insurance department; and
- such acquisition is approved by the domestic state Director of Insurance, to whom we refer as the Director of Insurance, after a public hearing.

Under U.S. state insurance laws and regulations, any person acquiring 10% or more of the outstanding voting securities of a corporation, such as our common stock, is presumed to have acquired control of that corporation and its subsidiaries.

Canadian federal insurance laws and regulations provide that no person may directly or indirectly acquire “control” of or a “significant interest” in our Canadian insurance subsidiary, RGA Canada, unless:

- such person has provided information, material and evidence to the Canadian Superintendent of Financial Institutions as required by him; and
- such acquisition is approved by the Canadian Minister of Finance.

For this purpose, “significant interest” means the direct or indirect beneficial ownership by a person, or group of persons acting in concert, of shares representing 10% or more of a given class, and “control” of an insurance company exists when:

- a person, or group of persons acting in concert, beneficially owns or controls an entity that beneficially owns securities, such as our common stock, representing more than 50% of the votes entitled to be cast for the election of directors and such votes are sufficient to elect a majority of the directors of the insurance company, or
- a person has any direct or indirect influence that would result in control in fact of an insurance company.

Similar laws in other countries where we operate limit our ability to effect changes of control for subsidiaries organized in such jurisdictions without the approval of local insurance regulatory officials. Prior to granting approval of an application to directly or indirectly acquire control of a domestic or foreign insurer, an insurance regulator in any jurisdiction may consider such factors as the financial strength of the applicant, the integrity of the applicant’s board of directors and executive officers, the applicant’s plans for the future operations of the domestic insurer and any anti-competitive results that may arise from the consummation of the acquisition of control.

Issuing additional shares may dilute the value or affect the price of our common stock.

Our board of directors has the authority, without action or vote of the shareholders, to issue any or all authorized but unissued shares of our common stock, including securities convertible into, or exchangeable for, our common stock and authorized but unissued shares under our equity compensation plans. In the future, we may issue such additional securities, through public

or private offerings, in order to raise additional capital. Any such issuance will dilute the percentage ownership of shareholders and may dilute the per share projected earnings or book value of our common stock. In addition, option holders may exercise their options at any time when we would otherwise be able to obtain additional equity capital on more favorable terms.

The price of our common stock may fluctuate significantly.

The overall market and the price of our common stock may continue to fluctuate as a result of many factors in addition to those discussed in the preceding risk factors. These factors, some or all of which are beyond our control, include:

- actual or anticipated fluctuations in our operating results;
- changes in expectations as to our future financial performance or changes in financial estimates of securities analysts;
- success of our operating and growth strategies;
- investor anticipation of strategic and technological threats, whether or not warranted by actual events;
- operating and stock price performance of other comparable companies; and
- realization of any of the risks described in these risk factors or those set forth in any subsequent Annual Report on Form 10-K or Quarterly Reports on Form 10-Q.

In addition, the stock market has historically experienced volatility that often has been unrelated or disproportionate to the operating performance of particular companies. These broad market and industry fluctuations may adversely affect the trading price of our common stock, regardless of our actual operating performance.

The occurrence of various events may adversely affect the ability of RGA and its subsidiaries to fully utilize any net operating losses (“NOL”s) and other tax attributes.

RGA and its subsidiaries may, from time to time, have a substantial amount of NOLs and other tax attributes, for U.S. federal income tax purposes, to offset taxable income and gains. If a corporation experiences an ownership change, it is generally subject to an annual limitation, which limits its ability to use its NOLs and other tax attributes. Events outside of our control may cause RGA (and, consequently, its subsidiaries) to experience an “ownership change” under Sections 382 and 383 of the Internal Revenue Code and the related Treasury regulations, and limit the ability of RGA and its subsidiaries to utilize fully such NOLs and other tax attributes. If we were to experience an ownership change, we could potentially have higher U.S. federal income tax liabilities than we would otherwise have had, which would negatively impact our financial condition and results of operations.

Item 1B. UNRESOLVED STAFF COMMENTS

The Company has no unresolved staff comments from the Securities and Exchange Commission.

Item 2. PROPERTIES

The Company’s headquarters is located at 16600 Swingley Ridge Road, Chesterfield, Missouri, which comprises approximately 400,000 square feet. In addition, the Company leases approximately 308,000 square feet of office space in 42 locations throughout the world.

Most of the Company’s leases have terms of three to five years; while some leases have longer terms, none exceed 15 years. As provided in Note 12 – “Commitments, Contingencies and Guarantees” in the Notes to Consolidated Financial Statements, the rental expense on operating leases for office space and equipment totaled \$13.7 million for 2016.

The Company believes its facilities have been generally well maintained and are in good operating condition. The Company believes the facilities are sufficient for its current requirements.

Item 3. LEGAL PROCEEDINGS

The Company is subject to litigation in the normal course of its business. The Company currently has no material litigation. A legal reserve is established when the Company is notified of an arbitration demand or litigation or is notified that an arbitration demand or litigation is imminent, it is probable that the Company will incur a loss as a result and the amount of the probable loss is reasonably capable of being estimated.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II**Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES**

Insurance companies are subject to statutory regulations that restrict the payment of dividends. See Item 1 under the caption Regulation – “Restrictions on Dividends and Distributions”. See Item 8, Note 18 – “Equity” in the Notes to Consolidated Financial Statements for information regarding board-approved stock repurchase plans. See Item 12 for information about the Company’s compensation plans.

Reinsurance Group of America, Incorporated common stock is traded on the New York Stock Exchange (NYSE) under the symbol “RGA”. On January 31, 2017, there were 28,414 stockholders of record of RGA’s common stock and 64.3 million shares outstanding. The following table presents the high and low closing prices for the common stock on the New York Stock Exchange during the periods indicated and the dividends declared per share during such periods:

Period	2016			2015		
	High	Low	Dividends Declared	High	Low	Dividends Declared
First Quarter	\$ 96.36	\$ 78.61	\$ 0.37	\$ 94.14	\$ 82.81	\$ 0.33
Second Quarter	99.29	90.26	0.37	98.00	90.68	0.33
Third Quarter	110.08	93.44	0.41	98.57	84.86	0.37
Fourth Quarter	128.28	107.00	0.41	97.08	83.36	0.37

Issuer Purchases of Equity Securities

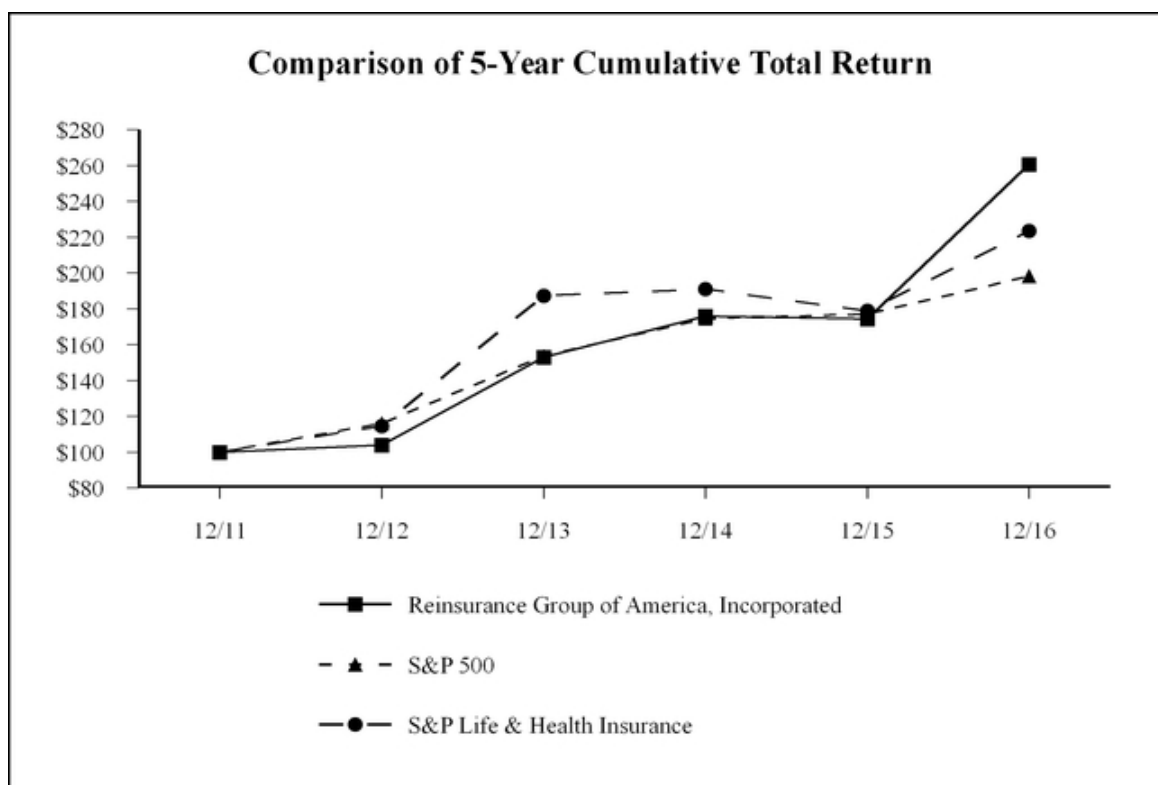
The following table summarizes RGA’s repurchase activity of its common stock during the quarter ended December 31, 2016:

	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plan or Program
October 1, 2016 - October 31, 2016	95	\$ 109.93	—	\$ 283,478,453
November 1, 2016 - November 30, 2016	4,458	\$ 112.75	—	\$ 283,478,453
December 1, 2016 - December 31, 2016	3,885	\$ 126.80	—	\$ 283,478,453

- (1) RGA had no repurchases of common stock under its share repurchase program during October, November and December 2016. The Company net settled - issuing 352, 17,242 and 8,912 shares from treasury and repurchasing from recipients 95, 4,458 and 3,885 shares in October, November and December 2016, respectively, in settlement of income tax withholding requirements incurred by the recipients of equity incentive awards.

Comparison of 5-Year Cumulative Total Return

Set forth below is a graph for the Company’s common stock for the period beginning December 31, 2011 and ending December 31, 2016, assuming \$100 was invested on December 31, 2011. The graph compares the cumulative total return on the Company’s common stock, based on the market price of the common stock and assuming reinvestment of dividends, with the cumulative total return of companies in the Standard & Poor’s 500 Stock Index and the Standard & Poor’s Insurance (Life/Health) Index. The indices are included for comparative purposes only. They do not necessarily reflect management’s opinion that such indices are an appropriate measure of the relative performance of the Company’s common stock, and are not intended to forecast or be indicative of future performance of the common stock.



	Base Period		Cumulative Total Return			
	12/11	12/12	12/13	12/14	12/15	12/16
Reinsurance Group of America, Incorporated	\$ 100.00	\$ 104.02	\$ 152.96	\$ 175.90	\$ 174.37	\$ 260.63
S & P 500	100.00	116.00	153.57	174.60	177.01	198.18
S & P Life & Health Insurance	100.00	114.59	187.33	190.98	178.93	223.41

Item 6. SELECTED FINANCIAL DATA

The following selected financial data has been derived from the Company's audited consolidated financial statements. The consolidated statement of income data for the years ended December 31, 2016, 2015 and 2014, and the consolidated balance sheet data at December 31, 2016 and 2015 have been derived from the Company's audited consolidated financial statements included elsewhere herein. The consolidated statement of income data for the years ended December 31, 2013 and 2012, and the consolidated balance sheet data at December 31, 2014, 2013 and 2012 have been derived from the Company's audited consolidated financial statements not included herein. The selected financial data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included elsewhere herein.

Selected Consolidated Financial and Operating Data

(in millions, except per share and operating data)

Income Statement Data	As of or For the Years Ended December 31,				
	2016	2015	2014	2013	2012
Revenues:					
Net premiums	\$ 9,248.9	\$ 8,570.7	\$ 8,669.9	\$ 8,254.0	\$ 7,906.6
Investment income, net of related expenses	1,911.9	1,734.5	1,713.7	1,699.9	1,436.2
Investment related gains (losses), net:					
Other-than-temporary impairments on fixed maturity securities	(38.8)	(57.4)	(7.8)	(12.7)	(15.9)
Other-than-temporary impairments on fixed maturity securities transferred to (from) other comprehensive income	0.1	—	—	(0.2)	(7.6)
Other investment related gains (losses), net	132.9	(107.3)	194.0	76.9	277.6
Total investment related gains (losses), net	94.2	(164.7)	186.2	64.0	254.1
Other revenues	266.5	277.7	334.4	300.5	244.0
Total revenues	11,521.5	10,418.2	10,904.2	10,318.4	9,840.9
Benefits and expenses:					
Claims and other policy benefits	7,993.4	7,489.4	7,406.7	7,304.3	6,666.0
Interest credited	364.7	337.0	451.0	476.5	379.9
Policy acquisition costs and other insurance expenses	1,310.6	1,127.5	1,391.4	1,300.8	1,306.5
Other operating expenses	645.5	554.0	538.4	466.7	451.8
Interest expense	137.6	142.9	96.7	124.3	105.3
Collateral finance and securitization expense	25.8	22.6	11.5	10.5	12.2
Total benefits and expenses	10,477.6	9,673.4	9,895.7	9,683.1	8,921.7
Income before income taxes	1,043.9	744.8	1,008.5	635.3	919.2
Provision for income taxes	342.5	242.6	324.5	216.4	287.3
Net income	\$ 701.4	\$ 502.2	\$ 684.0	\$ 418.9	\$ 631.9
Earnings Per Share					
Basic earnings per share	\$ 10.91	\$ 7.55	\$ 9.88	\$ 5.82	\$ 8.57
Diluted earnings per share	10.79	7.46	9.78	5.78	8.52
Weighted average diluted shares, in thousands	64,989	67,292	69,962	72,461	74,153
Dividends per share on common stock	\$ 1.56	\$ 1.40	\$ 1.26	\$ 1.08	\$ 0.84
Balance Sheet Data					
Total investments	\$ 44,841.3	\$ 41,978.3	\$ 36,696.1	\$ 32,441.1	\$ 32,912.2
Total assets	53,097.9	50,383.2	44,654.3	39,652.4	40,338.1
Policy liabilities ⁽¹⁾	37,874.0	37,370.8	30,892.2	28,386.1	27,886.6
Long-term debt	3,088.6	2,297.5	2,297.7	2,196.1	1,798.8
Collateral finance and securitization notes	840.7	899.2	774.0	480.9	646.1
Total stockholders' equity	7,093.1	6,135.4	7,023.5	5,935.5	6,910.2
Total stockholders' equity per share	110.31	94.09	102.13	83.87	93.47
Operating Data (in billions)					
Assumed ordinary life reinsurance in force	\$ 3,062.5	\$ 2,995.1	\$ 2,943.5	\$ 2,889.9	\$ 2,927.6
Assumed new business production	404.8	491.0	482.0	370.4	426.6

(1) Policy liabilities include future policy benefits, interest-sensitive contract liabilities, and other policy claims and benefits.

Item 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Cautionary Note Regarding Forward-Looking Statements

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 including, among others, statements relating to projections of the strategies, earnings, revenues, income or loss, ratios, future financial performance, and growth potential of the Company. The words “intend,” “expect,” “project,” “estimate,” “predict,” “anticipate,” “should,” “believe,” and other similar expressions also are intended to identify forward-looking statements. Forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. Future events and actual results, performance, and achievements could differ materially from those set forth in, contemplated by, or underlying the forward-looking statements.

Numerous important factors could cause actual results and events to differ materially from those expressed or implied by forward-looking statements including, without limitation, (1) adverse capital and credit market conditions and their impact on the Company’s liquidity, access to capital and cost of capital, (2) the impairment of other financial institutions and its effect on the Company’s business, (3) requirements to post collateral or make payments due to declines in market value of assets subject to the Company’s collateral arrangements, (4) the fact that the determination of allowances and impairments taken on the Company’s investments is highly subjective, (5) adverse changes in mortality, morbidity, lapsation or claims experience, (6) changes in the Company’s financial strength and credit ratings and the effect of such changes on the Company’s future results of operations and financial condition, (7) inadequate risk analysis and underwriting, (8) general economic conditions or a prolonged economic downturn affecting the demand for insurance and reinsurance in the Company’s current and planned markets, (9) the availability and cost of collateral necessary for regulatory reserves and capital, (10) market or economic conditions that adversely affect the value of the Company’s investment securities or result in the impairment of all or a portion of the value of certain of the Company’s investment securities, that in turn could affect regulatory capital, (11) market or economic conditions that adversely affect the Company’s ability to make timely sales of investment securities, (12) risks inherent in the Company’s risk management and investment strategy, including changes in investment portfolio yields due to interest rate or credit quality changes, (13) fluctuations in U.S. or foreign currency exchange rates, interest rates, or securities and real estate markets, (14) adverse litigation or arbitration results, (15) the adequacy of reserves, resources and accurate information relating to settlements, awards and terminated and discontinued lines of business, (16) the stability of and actions by governments and economies in the markets in which the Company operates, including ongoing uncertainties regarding the amount of U.S. sovereign debt and the credit ratings thereof, (17) competitive factors and competitors’ responses to the Company’s initiatives, (18) the success of the Company’s clients, (19) successful execution of the Company’s entry into new markets, (20) successful development and introduction of new products and distribution opportunities, (21) the Company’s ability to successfully integrate acquired blocks of business and entities, (22) action by regulators who have authority over the Company’s reinsurance operations in the jurisdictions in which it operates, (23) the Company’s dependence on third parties, including those insurance companies and reinsurers to which the Company cedes some reinsurance, third-party investment managers and others, (24) the threat of natural disasters, catastrophes, terrorist attacks, epidemics or pandemics anywhere in the world where the Company or its clients do business, (25) interruption or failure of the Company’s telecommunication, information technology or other operational systems, or the Company’s failure to maintain adequate security to protect the confidentiality or privacy of personal or sensitive data stored on such systems, (26) changes in laws, regulations, and accounting standards applicable to the Company, its subsidiaries, or its business, (27) the effect of the Company’s status as an insurance holding company and regulatory restrictions on its ability to pay principal of and interest on its debt obligations, and (28) other risks and uncertainties described in this document and in the Company’s other filings with the Securities and Exchange Commission (“SEC”).

Forward-looking statements should be evaluated together with the many risks and uncertainties that affect the Company’s business, including those mentioned in this document and described in the periodic reports the Company files with the SEC. These forward-looking statements speak only as of the date on which they are made. The Company does not undertake any obligations to update these forward-looking statements, even though the Company’s situation may change in the future. For a discussion of these risks and uncertainties that could cause actual results to differ materially from those contained in the forward-looking statements, you are advised to see Item 1A – “Risk Factors”.

Overview

The Company is one of the leading life reinsurers in North America based on premiums and the amount of life reinsurance in force. Based on an industry survey of 2015 information prepared by Munich American at the request of the Society of Actuaries Reinsurance Section (“SOA survey”), the Company has the third-largest market share in North America as measured by individual life insurance in force. The Company’s approach to the North American market has been to:

- focus on large, high-quality life insurers as clients;
- provide quality facultative underwriting and automatic reinsurance capacity; and

- deliver responsive and flexible service to its clients.

In 1994, the Company began using its North American underwriting expertise and industry knowledge to expand into international markets and now has operations in over 25 countries including locations in Asia Pacific, Europe, the Middle East and Africa. The Company generally starts operations from the ground up in new markets as opposed to acquiring existing operations, and it often enters new markets to support its North American clients as they expand internationally. Based on the compilation of information from competitors' annual reports, the Company believes it is the third-largest global life and health reinsurer in the world based on 2015 life and health reinsurance premiums. The Company conducts business with the majority of the largest U.S. and international life insurance companies. The Company has also developed its capacity and expertise in the reinsurance of longevity risks, asset-intensive products (primarily annuities and corporate-owned life insurance) and financial reinsurance.

The Company provides traditional reinsurance and financial solutions to its clients. Traditional reinsurance includes individual and group life and health, disability, and critical illness reinsurance. Financial solutions includes longevity reinsurance, asset-intensive reinsurance, and financial reinsurance. The Company derives revenues primarily from renewal premiums from existing reinsurance treaties, new business premiums from existing or new reinsurance treaties, fee income from financial solutions business and income earned on invested assets.

Historically, the Company's primary business has been traditional life reinsurance, which involves reinsuring life insurance policies that are often in force for the remaining lifetime of the underlying individuals insured, with premiums earned typically over a period of 10 to 30 years. Each year, however, a portion of the business under existing treaties terminates due to, among other things, lapses or voluntary surrenders of underlying policies, deaths of insureds, and the exercise of recapture options by ceding companies. The Company has expanded its financial solutions business, including significant asset-intensive transactions, which allow its clients to take advantage of growth opportunities and manage their capital, longevity and investment risk.

The Company's long-term profitability largely depends on the volume and amount of death- and health-related claims incurred and the ability to adequately price the risks it assumes. While death claims are reasonably predictable over a period of many years, claims become less predictable over shorter periods and are subject to significant fluctuation from quarter to quarter and year to year. Additionally, the Company generates profits on investment spreads associated with the reinsurance of investment type contracts and generates fees from financial reinsurance transactions which are typically shorter duration than its traditional life reinsurance business. The Company believes its sources of liquidity are sufficient to cover potential claims payments on both a short-term and long-term basis.

Segment Presentation

The Company has geographic-based and business-based operational segments. Geographic-based operations are further segmented into traditional and financial solutions businesses. In the fourth quarter of 2016, the Company changed the name of its Non-Traditional segments to Financial Solutions. The name change better aligns external reports to internally used terminology. This name change does not affect any previously reported results for the Financial Solutions segments.

The Company allocates capital to its segments based on an internally developed economic capital model, the purpose of which is to measure the risk in the business and to provide a consistent basis upon which capital is deployed. The economic capital model considers the unique and specific nature of the risks inherent in RGA's businesses. As a result of the economic capital allocation process, a portion of investment income is credited to the segments based on the level of allocated capital. In addition, the segments are charged for excess capital utilized above the allocated economic capital basis. This charge is included in policy acquisition costs and other insurance expenses. Segment investment performance varies with the composition of investments and the relative allocation of capital to the operating segments.

Segment premium levels can be significantly influenced by currency fluctuations, large transactions, mix of business and reporting practices of ceding companies, and therefore may fluctuate from period to period. Although reasonably predictable over a period of years, segment claims experience can be volatile over shorter periods. See "Results of Operations by Segment" below for further information about the Company's segments.

Industry Trends

The Company believes that the following trends in the life insurance industry will continue to create demand for life reinsurance.

Outsourcing of Mortality. The SOA survey indicates that U.S. life reinsurance in force has increased from \$7.0 trillion in 2005 to \$9.7 trillion at year-end 2015. The Company believes this trend reflects the continued utilization by life insurance companies of reinsurance to manage capital and mortality risk and to develop competitive products. However, the survey results indicate a decline in the percentage of new business being reinsured in recent years, which has caused premium growth rates in the U.S. life reinsurance market to moderate. The Company believes the decline in new business being reinsured is likely a reaction by ceding companies to a broad-based increase in reinsurance rates in the market, stronger capital positions maintained by ceding companies in recent years and a desire by ceding companies to adjust their risk profiles. However, the Company believes reinsurers will continue to be an integral part of the life insurance market due to their ability to efficiently aggregate a significant volume of life insurance in force, creating economies of scale and greater diversification of risk. As a result of having larger amounts of data at their disposal compared to primary life insurance companies, reinsurers tend to have better insights into mortality trends, creating more efficient pricing for mortality risk.

Capital Management. Changing regulatory environments, most notably in Europe, rating agencies and competitive business pressures are causing life insurers to evaluate reinsurance as a means to:

- manage risk-based capital by shifting mortality and other risks to reinsurers, thereby reducing amounts of reserves and capital they need to maintain;
- release capital to pursue new business initiatives;
- unlock the capital supporting, and value embedded in, non-core product lines; and
- exit certain lines of business.

Consolidation and Reorganization Within the Life Reinsurance and Life Insurance Industry. As a result of consolidations over the last decade within the life reinsurance industry, there are fewer competitors. According to the SOA survey, as of December 31, 2015, the top five companies held approximately 81.6% of the market share in North America based on life reinsurance in force. As a consequence, the Company believes the life reinsurance pricing environment will remain attractive for the remaining life reinsurers, particularly those with a significant market presence and strong ratings.

The SOA surveys indicate that the authors obtained information from participating or responding companies and do not guarantee the accuracy and completeness of their information. Additionally, the surveys do not survey all reinsurance companies, but the Company believes most of its principal competitors are included. While the Company believes these surveys to be generally reliable, the Company has not independently verified their data.

Additionally, merger and acquisition transactions within the life insurance industry continue to occur. The Company believes that reorganizations and consolidations of life insurers will continue. As reinsurance services are used to facilitate these transactions and manage risk, the Company expects demand for its products to continue.

Changing Demographics of Insured Populations. The aging of the population in North America is increasing demand for financial products among “baby boomers” who are concerned about protecting their peak income stream and are considering retirement and estate planning. The Company believes that this trend is likely to result in continuing demand for annuity products and life insurance policies, larger face amounts of life insurance policies and higher mortality and longevity risk taken by life insurers, all of which should fuel the need for insurers to seek reinsurance coverage. The Company continues to follow a two-part business strategy to capitalize on industry trends.

1) *Continue Growth of North American Mortality Business.* The Company’s strategy includes continuing to grow each of the following components of its North American mortality operations:

- **Facultative Reinsurance.** Based on discussions with the Company’s clients, an industry survey and informal knowledge about the industry, the Company believes it is a leader in facultative underwriting in North America. The Company intends to maintain that status by emphasizing its underwriting standards, prompt response on quotes, competitive pricing, capacity, value added services and flexibility in meeting customer needs. The Company believes its facultative business has allowed it to develop close, long-standing client relationships and generate additional business opportunities with its facultative clients. The Company has processed over 300,000 facultative submissions annually since 2011.
- **Automatic Reinsurance.** The Company intends to expand its presence in the North American automatic reinsurance market by using its mortality expertise and breadth of products and services to gain additional market share.
- **In Force Block Reinsurance.** Increasingly, there are occasions to grow the business by reinsuring in force blocks, as insurers and reinsurers seek to exit various non-core businesses and increase financial flexibility in order to, among other things, redeploy capital and pursue merger and acquisition activity. The Company continually seeks these types of opportunities.

2) *Continue Growth in Selected International Markets and Products.* The Company's strategy includes building upon the expertise and relationships developed in its North American business platform to continue its growth in selected international markets and products, including:

- **International Markets.** Management believes that international markets continue to offer opportunities for long-term growth, and the Company intends to capitalize on these opportunities by growing its presence in selected markets. Since 1994, the Company has entered new markets internationally, including, in the mid-to-late 1990s, Australia, Hong Kong, Japan, Malaysia, New Zealand, South Africa, Spain, Taiwan and the UK, and beginning in 2002, China, India and South Korea. The Company received regulatory approval to open a representative office in China in 2005 and received its branch license there in 2014; opened representative offices in Poland and Germany in 2006; opened new offices in France and Italy in 2007; opened a representative office in the Netherlands in 2009; and commenced operations in the UAE in 2011 and in Brazil in 2015. Before entering new markets, the Company evaluates several factors including:
 - the size of the insured population,
 - competition,
 - the level of reinsurance penetration,
 - regulation,
 - existing clients with a presence in the market, and
 - the economic, social and political environment.

As previously indicated, the Company generally starts new operations in these markets from the ground up as opposed to acquiring existing operations, and it often enters these markets to support its large international clients as they expand into additional markets. Many of the markets that the Company has entered since 1994, or may enter in the future, are not utilizing life reinsurance, including facultative life reinsurance, at the same levels as the North American market, and therefore, the Company believes these markets represent opportunities for increasing reinsurance penetration. In particular, management believes markets such as Japan, Southeast Asia and South Korea are beginning to realize the benefits that reinsurers bring to the life insurance market. Markets such as China and India represent longer-term opportunities for growth as the underlying direct life insurance markets grow to meet the needs of growing middle-class populations. Additionally, the Company believes that regulatory changes (e.g., Solvency II) in European markets may cause ceding companies to reduce counterparty exposure to their existing life reinsurers and reinsure more business, creating opportunities for the Company.

- **Asset-intensive and Longevity Reinsurance and Other Products.** The Company intends to continue leveraging its existing client relationships and reinsurance expertise to create customized reinsurance products and solutions. Industry trends, particularly the increased pace of consolidation and reorganization among life insurance companies and changes in products and product distribution along with new solvency requirements, are expected to enhance existing opportunities for asset-intensive and longevity reinsurance and financial solutions products. The Company began reinsuring annuities with guaranteed minimum benefits on a limited basis in 2007. To date, most of the Company's asset-intensive reinsurance business has been written in the U.S. and the UK; however, additional opportunities outside of the U.S. continue to develop. The Company also provides longevity reinsurance in Europe and Canada, and in 2008 entered the U.S. healthcare reinsurance market with a primary focus on long-term care and Medicare supplement insurance. In 2010, the Company expanded into the group reinsurance market in North America with the acquisition of Reliastar Life Insurance Company's U.S. and Canada operations.

Consolidated Results of Operations

The following table summarizes net income for the periods presented.

	For the years ended December 31,		
	2016	2015	2014
(Dollars in thousands, except per share data)			
Revenues			
Net premiums	\$ 9,248,871	\$ 8,570,741	\$ 8,669,854
Investment income, net of related expenses	1,911,886	1,734,495	1,713,691
Investment related gains (losses), net:			
Other-than-temporary impairments on fixed maturity securities	(38,805)	(57,380)	(7,766)
Other-than-temporary impairments on fixed maturity securities transferred to (from) accumulated other comprehensive income	74	—	—
Other investment related gains (losses), net	132,926	(107,370)	193,959
Total investment related gains (losses), net	94,195	(164,750)	186,193
Other revenues	266,559	277,692	334,456
Total revenues	11,521,511	10,418,178	10,904,194
Benefits and expenses			
Claims and other policy benefits	7,993,375	7,489,382	7,406,641
Interest credited	364,691	336,964	451,031
Policy acquisition costs and other insurance expenses	1,310,540	1,127,486	1,391,433
Other operating expenses	645,509	554,044	538,415
Interest expense	137,623	142,863	96,700
Collateral finance and securitization expense	25,827	22,644	11,441
Total benefits and expenses	10,477,565	9,673,383	9,895,661
Income before income taxes	1,043,946	744,795	1,008,533
Provision for income taxes	342,503	242,629	324,486
Net income	\$ 701,443	\$ 502,166	\$ 684,047
Earnings per share			
Basic earnings per share	\$ 10.91	\$ 7.55	\$ 9.88
Diluted earnings per share	10.79	7.46	9.78
Dividends declared per share	\$ 1.56	\$ 1.40	\$ 1.26

Consolidated net income increased \$199.3 million, or 39.7%, and decreased \$181.9 million, or 26.6%, in 2016 and 2015, respectively. Diluted earnings per share on net income were \$10.79 in 2016 compared to \$7.46 in 2015 and \$9.78 in 2014.

Consolidated income before income taxes increased \$299.2 million, or 40.2%, and decreased \$263.7 million, or 26.2% in 2016 and 2015, respectively. The increase in income before income taxes in 2016 was primarily due to an increase in investment related gains, higher investment income and improved mortality experience in the U.S. operations compared to the prior year. The increase in investment related gains reflects changes in the fair value of embedded derivatives on modco or funds withheld treaties in 2016 and 2015, primarily due to changes in credit spreads. The effect of the change in fair value of these embedded derivatives on income is discussed below.

The decrease in income before income taxes in 2015 was primarily due to unfavorable mortality experience compared to the prior year, a decrease in investment related gains and adverse foreign currency fluctuations. The decrease in investment related gains reflects changes in the fair value of embedded derivatives on modco or funds withheld treaties in 2015 and 2014, primarily due to changes in credit spreads. The effect of the change in fair value of these embedded derivatives on income is discussed below.

Net income in 2014 benefited from the release of liabilities established for uncertain tax positions due to the closure with the U.S. Internal Revenue Service of tax returns for a recent five-year period. As a result of that release and other adjustments, the provision for income taxes in 2014 was reduced and accrued interest expense of approximately \$43.9 million was reversed. The effect of recognizing the closure of these tax years and other related adjustments increased net income by \$33.0 million.

Foreign currency exchange fluctuations resulted in decreases to income before income taxes of approximately \$28.9 million and \$55.1 million in 2016 and 2015, respectively.

The Company recognizes in consolidated income any changes in the value of embedded derivatives on modco or funds withheld treaties, equity-indexed annuity treaties (“EIAs”) and variable annuity products. The combined changes in these three types of embedded derivatives, after adjustment for deferred acquisition costs and retrocession, resulted in an increase to income before income taxes of \$43.7 million in 2016 and a decrease of \$191.6 million in 2015, as compared to the prior years. These

fluctuations do not affect current cash flows, crediting rates or spread performance on the underlying treaties. Therefore, management believes it is helpful to distinguish between the effects of changes in these embedded derivatives, net of related hedging activity, and the primary factors that drive profitability of the underlying treaties, namely investment income, fee income, and interest credited. The individual effect on income before income taxes for these three types of embedded derivatives is as follows:

- The change in the value of embedded derivatives related to reinsurance treaties written on a modco or funds withheld basis are subject to the general accounting principles for *Derivatives and Hedging* related to embedded derivatives. The unrealized gains and losses associated with these embedded derivatives, after adjustment for deferred acquisition costs, increased income before income taxes by \$54.1 million in 2016 and decreased income by \$109.6 million in 2015, as compared to the prior years.
- Changes in risk-free rates used in the fair value estimates of embedded derivatives associated with EIAs affect the amount of unrealized gains and losses the Company recognizes. The unrealized gains and losses associated with EIAs, after adjustment for deferred acquisition costs and retrocession, increased income before income taxes by \$8.4 million and \$5.1 million in 2016 and 2015, respectively, as compared to the prior years.
- The change in the Company's liability for variable annuities associated with guaranteed minimum living benefits affects the amount of unrealized gains and losses the Company recognizes. The unrealized gains and losses associated with guaranteed minimum living benefits, after adjustment for deferred acquisition costs, decreased income before income taxes by \$18.8 million and \$87.1 million in 2016 and 2015, respectively, as compared to the prior years.

Consolidated net premiums increased \$678.1 million, or 7.9%, and decreased \$99.1 million, or 1.1%, in 2016 and 2015. The increase in 2016 is primarily due to growth in life reinsurance in force and large in force block transactions entered into during the latter part of 2015, partially offset by adverse foreign currency fluctuations. The decrease in 2015 is due primarily to adverse foreign currency fluctuations and a large retrocession transaction completed during the fourth quarter of 2014, partially offset by additional premiums from new business from both new and existing treaties. The retrocession transaction reduced the U.S. and Latin America Traditional segment premiums by approximately \$321.4 million in 2015, compared to 2014. Foreign currency fluctuations relative to the prior year affected net premiums unfavorably by approximately \$172.2 million and \$473.5 million in 2016 and 2015, respectively. Consolidated assumed life insurance in force was \$3,062.5 billion, \$2,995.1 billion and \$2,943.5 billion as of December 31, 2016, 2015 and 2014, respectively. Foreign currency fluctuations affected the increases in assumed life insurance in force unfavorably by \$68.0 billion and \$146.5 billion in 2016 and 2015, respectively. The Company added new business production, measured by face amount of insurance in force, of \$404.8 billion, \$491.0 billion and \$482.0 billion during 2016, 2015 and 2014, respectively. U.S. and Latin America health and group reinsurance increased net premiums by \$169.7 million and \$84.5 million in 2016 and 2015, respectively, as compared to the prior years.

Consolidated investment income, net of related expenses, increased \$177.4 million, or 10.2%, and \$20.8 million, or 1.2%, in 2016 and 2015, respectively, primarily due to increases in the average asset base. Investment income reflects market value changes related to the Company's funds withheld at interest investment associated with the reinsurance of certain EIAs, which contributed \$23.4 million to the increase in 2016 and offset the increase in 2015 by \$108.8 million. The effect on investment income of the EIAs' market value changes is substantially offset by a corresponding change in interest credited to policyholder account balances resulting in an insignificant effect on net income. Contributing to the increases in investment income were higher average invested assets at amortized cost, excluding spread related business, which totaled \$23.2 billion, \$20.8 billion and \$19.9 billion in 2016, 2015 and 2014, respectively. The average yield earned on investments, excluding spread related business, was 4.57%, 4.82% and 4.82% in 2016, 2015 and 2014, respectively. The yield in 2015 benefited from the cumulative effect of income related to a funds withheld transaction executed in the fourth quarter of 2015 within the U.S. and Latin America Traditional segment, retroactive to the beginning of the year. The yield in 2014 benefited from higher than expected mortgage loan prepayment fees and bond make-whole premiums. The average yield will vary from year to year depending on a number of variables, including the prevailing interest rate and credit spread environment, prepayment fees and make-whole premiums, changes in the mix of the underlying investments and cash balances, and the timing of dividends and distributions on certain investments. A continued low interest rate environment is expected to put downward pressure on this yield in future reporting periods.

Total investment related gains (losses), net, improved by \$258.9 million, or 157.2% in 2016, and declined by \$350.9 million, or 188.5% in 2015. The improvement in 2016 is primarily due to a favorable change in the value of embedded derivatives related to reinsurance treaties written on a modco or funds withheld basis of \$152.9 million. Conversely, the decline in 2015 was primarily due to an unfavorable change in the value of embedded derivatives related to reinsurance treaties written on a modco or funds withheld basis of \$297.2 million. Investment impairments on fixed maturity securities decreased by \$18.6 million in 2016 and increased by \$49.6 million in 2015, compared to the prior years. See Note 4 - "Investments" and Note 5 - "Derivative Instruments" in the Notes to Consolidated Financial Statements for additional information on investment related gains (losses), net, and derivatives. Investment income is allocated to the operating segments based upon average assets and related capital levels deemed appropriate to support segment operations.

The effective tax rate on a consolidated basis was 32.8%, 32.6% and 32.2% for 2016, 2015, and 2014, respectively. The 2016, 2015 and 2014 effective tax rates are affected by earnings of non-U.S. subsidiaries in which the Company is permanently

reinvested whose statutory tax rates are less than the U.S. statutory tax rate of 35.0%, Subpart F income, tax benefits related to the release of uncertain tax positions and differences in tax bases in foreign jurisdictions. Canada, Ireland and UK statutory rates are less than the U.S. statutory rate resulting in the legal entities in these jurisdictions giving rise to the majority of the foreign rate differential. See Note 9 - "Income Tax" in the Notes to Consolidated Financial Statements for additional information on the Company's consolidated effective tax rate.

Critical Accounting Policies

The Company's accounting policies are described in Note 2 – "Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements. The Company believes its most critical accounting policies include the establishment of premiums receivable; amortization of deferred acquisition costs ("DAC"); the establishment of liabilities for future policy benefits and incurred but not reported claims; the valuation of investments and investment impairments; the valuation of embedded derivatives; and accounting for income taxes. The balances of these accounts require extensive use of assumptions and estimates, particularly related to the future performance of the underlying business.

Differences in experience compared with the assumptions and estimates utilized in establishing premiums receivable, the justification of the recoverability of DAC, in establishing reserves for future policy benefits and claim liabilities, or in the determination of other-than-temporary impairments to investment securities can have a material effect on the Company's results of operations and financial condition.

Premiums Receivable

Premiums are accrued when due and in accordance with information received from the ceding company. When the Company enters into a new reinsurance agreement, it records accruals based on the terms of the reinsurance treaty. Similarly, when a ceding company fails to report information on a timely basis, the Company records accruals based on the terms of the reinsurance treaty as well as historical experience. Other management estimates include adjustments for increased insurance in force on existing treaties, lapsed premiums given historical experience, the financial health of specific ceding companies, collateral value and the legal right of offset on related amounts (i.e. allowances and claims) owed to the ceding company. Under the legal right of offset provisions in its reinsurance treaties, the Company can withhold payments for allowances and claims from unpaid premiums.

Deferred Acquisition Costs

Costs of acquiring new business, which vary with and are directly related to the production of new business, have been deferred to the extent that such costs are deemed recoverable from future premiums or gross profits. Such costs include commissions and allowances as well as certain costs of policy issuance and underwriting. Non-commission costs related to the acquisition of new and renewal insurance contracts may be deferred only if they meet the following criteria:

- Incremental direct costs of a successful contract acquisition.
- Portions of employees' salaries and benefits directly related to time spent performing specified acquisition activities for a contract that has been acquired or renewed.
- Other costs directly related to the specified acquisition or renewal activities that would not have been incurred had that acquisition contract transaction not occurred.

The Company tests the recoverability for each year of business at issue before establishing additional DAC. The Company also performs annual tests to establish that DAC remain recoverable at all times, and if financial performance significantly deteriorates to the point where a deficiency exists, a cumulative charge to current operations will be recorded. No such adjustments related to DAC recoverability were made in 2016, 2015 and 2014.

DAC related to traditional life insurance contracts are amortized with interest over the premium-paying period of the related policies in proportion to the ratio of individual period premium revenues to total anticipated premium revenues over the life of the policy. Such anticipated premium revenues are estimated using the same assumptions used for computing liabilities for future policy benefits.

DAC related to interest-sensitive life and investment-type policies are amortized over the lives of the policies, in proportion to the actual and estimated gross profits expected to be realized from mortality, investment income less interest credited, and expense margins.

Liabilities for Future Policy Benefits and Incurred but not Reported Claims

Liabilities for future policy benefits under long-term life insurance policies (policy reserves) are computed based upon expected investment yields, mortality and withdrawal (lapse) rates, and other assumptions, including a provision for adverse deviation from expected claim levels. The Company primarily relies on its own valuation and administration systems to establish policy reserves. The policy reserves the Company establishes may differ from those established by the ceding companies due to the use of different mortality and other assumptions. However, the Company relies upon its ceding company clients to provide accurate data, including policy-level information, premiums and claims, which is the primary information used to establish reserves.

The Company's administration departments work directly with clients to help ensure information is submitted in accordance with the reinsurance contracts. Additionally, the Company performs periodic audits of the information provided by clients. The Company establishes reserves for processing backlogs with a goal of clearing all backlogs within a ninety-day period. The backlogs are usually due to data errors the Company discovers or computer file compatibility issues, since much of the data reported to the Company is in electronic format and is uploaded to its computer systems.

The Company periodically reviews actual historical experience and relative anticipated experience compared to the assumptions used to establish aggregate policy reserves. Further, the Company establishes premium deficiency reserves if actual and anticipated experience indicates that existing aggregate policy reserves, together with the present value of future gross premiums, are not sufficient to cover the present value of future benefits, settlement and maintenance costs and to recover unamortized acquisition costs. The premium deficiency reserve is established through a charge to income, as well as a reduction to unamortized acquisition costs and, to the extent there are no unamortized acquisition costs, an increase to future policy benefits. Because of the many assumptions and estimates used in establishing reserves and the long-term nature of the Company's reinsurance contracts, the reserving process, while based on actuarial science, is inherently uncertain. If the Company's assumptions, particularly on mortality, are inaccurate, its reserves may be inadequate to pay claims and there could be a material adverse effect on its results of operations and financial condition.

Claims payable for incurred but not reported losses are determined using case-basis estimates and lag studies of past experience. The time lag from the date of the claim or death to the date when the ceding company reports the claim to the Company can be several months and can vary significantly by ceding company, business segment and product type. Incurred but not reported claims are estimates on an undiscounted basis, using actuarial estimates of historical claims expense, adjusted for current trends and conditions. These estimates are continually reviewed and the ultimate liability may vary significantly from the amount recognized, which are reflected in net income in the period in which they are determined.

Valuation of Investments and Other-than-Temporary Impairments

The Company primarily invests in fixed maturity securities, mortgage loans, short-term investments, and other invested assets. For investments reported at fair value, the Company utilizes, when available, fair values based on quoted prices in active markets that are regularly and readily obtainable. Generally, these are very liquid investments and the valuation does not require management judgment. When quoted prices in active markets are not available, fair value is based on market valuation techniques, market comparable pricing and the income approach. The Company may utilize information from third parties, such as pricing services and brokers, to assist in determining the fair value for certain investments; however, management is ultimately responsible for all fair values presented in the Company's consolidated financial statements. This includes responsibility for monitoring the fair value process, ensuring objective and reliable valuation practices and pricing of assets and liabilities, and approving changes to valuation methodologies and pricing sources. The selection of the valuation technique(s) to apply considers the definition of an exit price and the nature of the investment being valued and significant expertise and judgment is required.

Fixed maturity securities are classified as available-for-sale and are carried at fair value. Unrealized gains and losses on fixed maturity securities classified as available-for-sale, less applicable deferred income taxes as well as related adjustments to deferred acquisition costs, if applicable, are reflected as a direct charge or credit to accumulated other comprehensive income ("AOCI") in stockholders' equity on the consolidated balance sheets.

See "Investments" in Note 2 – "Summary of Significant Accounting Policies" and Note 6 – "Fair Value of Assets and Liabilities" in the Notes to the Consolidated Financial Statements for additional information regarding the valuation of the Company's investments.

Mortgage loans on real estate are carried at unpaid principal balances, net of any unamortized premium or discount and valuation allowances. For a discussion regarding the valuation allowance for mortgage loans see "Mortgage Loans on Real Estate" in Note 2 – "Summary of Significant Accounting Policies" in the Notes to the Consolidated Financial Statements.

In addition, investments are subject to impairment reviews to identify when a decline in value is other-than-temporary. Other-than-temporary impairment losses related to non-credit factors are recognized in AOCI whereas the credit loss portion is recognized in investment related gains (losses), net. See "Other-than-Temporary Impairment" in Note 2 – "Summary of Significant Accounting Policies" in the Notes to the Consolidated Financial Statements for a discussion of the policies regarding other-than-temporary impairments.

Valuation of Embedded Derivatives

The Company reinsures certain annuity products that contain terms that are deemed to be embedded derivatives, primarily equity-indexed annuities and variable annuities with guaranteed minimum benefits. The Company assesses each identified embedded derivative to determine whether it is required to be bifurcated under the general accounting principles for *Derivatives and Hedging*. If the instrument would not be reported in its entirety at fair value and it is determined that the terms of the embedded derivative are not clearly and closely related to the economic characteristics of the host contract, and that a separate instrument with the same terms would qualify as a derivative instrument, the embedded derivative is bifurcated from the host contract and

accounted for as a freestanding derivative. Such embedded derivatives are carried on the consolidated balance sheets at fair value with the host contract.

Additionally, reinsurance treaties written on a modified coinsurance or funds withheld basis are subject to the general accounting principles for *Derivatives and Hedging* related to embedded derivatives. The majority of the Company's funds withheld at interest balances are associated with its reinsurance of annuity contracts, the majority of which are subject to the general accounting principles for *Derivatives and Hedging* related to embedded derivatives. Management believes the embedded derivative feature in each of these reinsurance treaties is similar to a total return swap on the assets held by the ceding companies.

The valuation of the various embedded derivatives requires complex calculations based on actuarial and capital markets inputs and assumptions related to estimates of future cash flows and interpretations of the primary accounting guidance continue to evolve in practice. The valuation of embedded derivatives is sensitive to the investment credit spread environment. Changes in investment credit spreads are also affected by the application of a credit valuation adjustment ("CVA"). The fair value calculation of an embedded derivative in an asset position utilizes a CVA based on the ceding company's credit risk. Conversely, the fair value calculation of an embedded derivative in a liability position utilizes a CVA based on the Company's credit risk. Generally, an increase in investment credit spreads, ignoring changes in the CVA, will have a negative impact on the fair value of the embedded derivative (decrease in income). See "Derivative Instruments" in Note 2 – "Summary of Significant Accounting Policies" and Note 6 – "Fair Value of Assets and Liabilities" in the Notes to the Consolidated Financial Statements for additional information regarding the valuation of the Company's embedded derivatives.

Income Taxes

The Company provides for federal, state and foreign income taxes currently payable, as well as those deferred due to temporary differences between the financial reporting and tax bases of assets and liabilities and are recognized in net income or in certain cases in other comprehensive income. The Company's accounting for income taxes represents management's best estimate of various events and transactions considering the laws enacted as of the reporting date.

Deferred tax assets and liabilities resulting from temporary differences between the financial reporting and tax bases of assets and liabilities are measured at the reporting date using enacted tax rates in the relevant jurisdictions expected to apply to taxable income in the years the temporary differences are expected to reverse.

The realization of deferred tax assets depends upon the existence of sufficient taxable income within the carryback or carryforward periods under the tax law in the applicable tax jurisdiction. The Company has deferred tax assets related to net operating and capital losses. The Company has projected its ability to utilize its U.S. and foreign net operating losses and has determined that all of the U.S. losses are expected to be utilized prior to their expiration and established a valuation allowance on the portion of the foreign deferred tax assets the Company believes more likely than not that deferred income tax assets will not be realized.

The Company will establish a valuation allowance if management determines, based on available information, that it is more likely than not that deferred income tax assets will not be realized. Significant judgment is required in determining whether valuation allowances should be established as well as the amount of such allowances. When making such determination, consideration is given to, among other things, the following:

- (i) future projected taxable income exclusive of reversing temporary differences and carryforwards;
- (ii) future reversals of existing taxable temporary differences;
- (iii) taxable income in prior carryback years; and
- (iv) tax planning strategies.

Any such changes could significantly affect the amounts reported in the consolidated financial statements in the year these changes occur. The Company accounts for its total liability for uncertain tax positions considering the recognition and measurement thresholds established in general accounting principles for income taxes. The tax effects of a position are recognized in the consolidated statement of income only if it is more likely than not to be sustained upon examination by the appropriate taxing authority. Unrecognized tax benefits due to tax uncertainties that do not meet the more likely than not criteria are included within other liabilities and are charged to earnings in the period that such determination is made. The Company classifies interest related to tax uncertainties as interest expense whereas penalties related to tax uncertainties are classified as a component of income tax.

Results of Operations by Segment

U.S. and Latin America Operations

The U.S. and Latin America operations include business generated by its offices in the U.S., Mexico and Brazil. The offices in Mexico and Brazil provide services to clients in other Latin American countries. U.S. and Latin America operations consist of two major segments: Traditional and Financial Solutions. The Traditional segment primarily specializes in individual mortality-risk reinsurance and to a lesser extent, group, health and long-term care reinsurance. The Financial Solutions segment consists of Asset-Intensive and Financial Reinsurance. Asset-Intensive within the Financial Solutions segment provides coinsurance of annuities and corporate-owned life insurance policies and to a lesser extent also issues fee-based synthetic guaranteed investment contracts, which include investment-only, stable value contracts. Financial Reinsurance within the Financial Solutions segment primarily involves assisting ceding companies in meeting applicable regulatory requirements by enhancing the ceding companies' financial strength and regulatory surplus position through relatively low risk reinsurance transactions. Typically these transactions do not qualify as reinsurance under GAAP, due to the low-risk nature of the transactions, so only the related net fees are reflected in other revenues on the consolidated statements of income.

For the year ended December 31, 2016

	Financial Solutions			Total U.S. and Latin America
	Traditional	Asset-Intensive	Financial Reinsurance	
(dollars in thousands)				
Revenues:				
Net premiums	\$ 5,249,571	\$ 24,349	\$ —	\$ 5,273,920
Investment income, net of related expenses	699,833	623,974	7,123	1,330,930
Investment related gains (losses), net	(4,229)	13,648	—	9,419
Other revenues	19,793	93,614	77,738	191,145
Total revenues	5,964,968	755,585	84,861	6,805,414
Benefits and expenses:				
Claims and other policy benefits	4,632,821	81,860	—	4,714,681
Interest credited	85,029	251,247	—	336,276
Policy acquisition costs and other insurance expenses	749,487	174,225	14,650	938,362
Other operating expenses	126,530	24,111	10,973	161,614
Total benefits and expenses	5,593,867	531,443	25,623	6,150,933
Income before income taxes	\$ 371,101	\$ 224,142	\$ 59,238	\$ 654,481

For the year ended December 31, 2015

	Financial Solutions			Total U.S. and Latin America
	Traditional	Asset-Intensive	Financial Reinsurance	
(dollars in thousands)				
Revenues:				
Net premiums	\$ 4,806,706	\$ 22,177	\$ —	\$ 4,828,883
Investment income, net of related expenses	636,779	560,701	5,479	1,202,959
Investment related gains (losses), net	2,306	(118,482)	—	(116,176)
Other revenues	19,235	105,389	68,601	193,225
Total revenues	5,465,026	569,785	74,080	6,108,891
Benefits and expenses:				
Claims and other policy benefits	4,366,696	66,146	—	4,432,842
Interest credited	77,500	244,318	—	321,818
Policy acquisition costs and other insurance expenses	673,331	85,760	10,193	769,284
Other operating expenses	111,728	20,615	8,870	141,213
Total benefits and expenses	5,229,255	416,839	19,063	5,665,157
Income before income taxes	\$ 235,771	\$ 152,946	\$ 55,017	\$ 443,734

For the year ended December 31, 2014

	Financial Solutions			Total U.S. and Latin America
	Traditional	Asset-Intensive	Financial Reinsurance	
(dollars in thousands)				
Revenues:				
Net premiums	\$ 4,725,505	\$ 20,079	\$ —	\$ 4,745,584
Investment income, net of related expenses	552,805	639,794	4,491	1,197,090
Investment related gains (losses), net	1,443	152,039	(111)	153,371
Other revenues	3,515	115,032	82,819	201,366
Total revenues	5,283,268	926,944	87,199	6,297,411
Benefits and expenses:				
Claims and other policy benefits	4,130,308	19,848	—	4,150,156
Interest credited	51,184	382,539	—	433,723
Policy acquisition costs and other insurance expenses	641,785	256,989	25,256	924,030
Other operating expenses	108,346	16,882	9,685	134,913
Total benefits and expenses	4,931,623	676,258	34,941	5,642,822
Income before income taxes	\$ 351,645	\$ 250,686	\$ 52,258	\$ 654,589

Income before income taxes for the U.S. and Latin America operations segment increased by \$210.7 million, or 47.5%, and decreased by \$210.9 million, or 32.2%, in 2016 and 2015, respectively. The increase in 2016 was driven by changes in the value of the embedded derivatives associated with reinsurance treaties structured on a modco or funds withheld basis, improved claims experience in the Traditional segment, and higher investment income due to a higher invested asset base, driven largely by acquisitions of in force blocks late in 2015. The decrease in income before income taxes in 2015 was primarily due to adverse claims experience in both the individual and group lines of business as well as changes in the value of the embedded derivatives associated with reinsurance treaties structured on a modco or funds withheld basis.

Traditional Reinsurance

The U.S. and Latin America Traditional segment provides individual and group life and health reinsurance to domestic clients for a variety of products through yearly renewable term, coinsurance and modified coinsurance agreements. These reinsurance arrangements may involve either facultative or automatic agreements.

Income before income taxes for the U.S. and Latin America Traditional segment increased by \$135.3 million, or 57.4%, and decreased by \$115.9 million, or 33.0% in 2016 and 2015, respectively. The increase in 2016 was primarily due to improved claims experience and an increase in investment income due to a higher invested asset base primarily associated with large in force block transactions executed in the fourth quarter of 2015. The decrease in 2015 reflects deterioration in claims experience primarily due to elevated claims in both the individual life and group lines of business. In 2015, there was an increase in the average claim size, mostly in older issue-age policies. The group line of business experienced an increase in both new and reopened disability claims. The poor claims experience was somewhat offset by additional investment income primarily due to an increase in the overall invested asset base as well as prepayments in the Traditional investment portfolios.

Net premiums increased \$442.9 million, or 9.2%, and \$81.2 million, or 1.7% in 2016 and 2015, respectively. These increases in net premiums were driven primarily by the growth in individual life business in force and individual health and group reinsurance. The increase in 2016 was primarily due to large in force block transactions executed during the latter part of 2015, significant individual health and group life transactions executed in the first six months of 2016, and organic premium growth. Offsetting the growth somewhat in 2015 was a large retrocession transaction completed during the fourth quarter of 2014, which reduced U.S. Traditional premiums by approximately \$321.4 million in 2015, as compared to 2014. The segment added new life business production, measured by face amount of insurance in force, of \$126.4 billion, \$203.9 billion and \$176.9 billion during 2016, 2015 and 2014, respectively. Contributing to the increases in 2015 were large in force block transactions of \$114.5 billion. Total face amount of life business in force was \$1,609.3 billion, \$1,594.3 billion and \$1,483.9 billion as of December 31, 2016, 2015 and 2014, respectively. Individual health and group reinsurance contributed \$169.7 million and \$84.5 million to the increase in net premiums in 2016 and 2015, respectively.

Net investment income increased \$63.1 million, or 9.9%, and \$84.0 million, or 15.2%, in 2016 and 2015, respectively. The increase in 2016 was primarily due to an increase in the average invested asset base primarily associated with the aforementioned in force block transactions along with strong variable investment income partially offset by a lower investment yield. The increase in 2015 was primarily due to an increase in the average invested asset base partially offset by a lower investment yield. Additionally in 2015, investment income benefited from the cumulative effect of investment income related to a funds withheld transaction retroactive to the beginning of the year. Investment related gains decreased by \$6.5 million in 2016, and increased by \$0.9 million

in 2015. The decrease in 2016 was primarily driven by changes in the fair value of the embedded derivatives associated with one reinsurance treaty structured on a modco basis.

Claims and other policy benefits as a percentage of net premiums (“loss ratios”) were 88.3%, 90.8% and 87.4% in 2016, 2015 and 2014, respectively. The decrease in the loss ratios for 2016 was primarily due to a decrease in the average claim size. The increase in the loss ratio in 2015 was primarily due to an increase in the average claim size, most notably for older issue-age policies within the individual mortality block of business. Lower profit margins may emerge for the foreseeable future while this cohort of business fully runs its course. In addition, in 2015 the group disability business was negatively affected by an increase in new and reopened claims.

Interest credited expense increased by \$7.5 million, or 9.7%, in 2016 and \$26.3 million, or 51.4%, in 2015. The variances in interest credited expense are largely offset by variances in investment income. The increase in 2015 can be attributed to the acquisition of Aurora National. Interest credited in this segment relates to amounts credited on cash value products which also have a significant mortality component. Income before income taxes is affected by the spread between the investment income and the interest credited on the underlying products.

Policy acquisition costs and other insurance expenses as a percentage of net premiums were 14.3%, 14.0% and 13.6% in 2016, 2015 and 2014, respectively. Overall, while these ratios are expected to remain in a predictable range, they may fluctuate from period to period due to varying allowance levels within coinsurance-type arrangements. In addition, the amortization pattern of previously capitalized amounts, which are subject to the form of the reinsurance agreement and the underlying insurance policies, may vary. Also, the mix of first year coinsurance business versus yearly renewable term business can cause the percentage to fluctuate from period to period. In recent years, reinsurance treaties weighted toward yearly renewable term structures have contributed to relatively stable rates.

Other operating expenses increased \$14.8 million, or 13.2%, and \$3.4 million, or 3.1% in 2016 and 2015, respectively. Contributing to the increase in 2016 was an expansion in underwriting personnel to support clients. Other operating expenses, as a percentage of net premiums, were 2.4%, 2.3% and 2.3% in 2016, 2015 and 2014, respectively. The expense ratio tends to fluctuate only slightly from period to period due to maturity and scale of this segment.

Financial Solutions - Asset-Intensive Reinsurance

Asset-Intensive within the U.S. and Latin America Financial Solutions segment primarily assumes investment risk within underlying annuities and corporate-owned life insurance policies. Most of these agreements are coinsurance, coinsurance with funds withheld or modco. The Company recognizes profits or losses primarily from the spread between the investment income earned and the interest credited on the underlying deposit liabilities, income associated with longevity risk, and fees associated with variable annuity account values and guaranteed investment contracts.

Impact of certain derivatives

Income from the asset-intensive business tends to be volatile due to changes in the fair value of certain derivatives, including embedded derivatives associated with reinsurance treaties structured on a modco or funds withheld basis, as well as embedded derivatives associated with the Company’s reinsurance of EIAs and variable annuities with guaranteed minimum benefit riders. Fluctuations occur period to period primarily due to changing investment conditions including, but not limited to, interest rate movements (including risk-free rates and credit spreads), implied volatility, the Company’s own credit risk and equity market performance, all of which are factors in the calculations of fair value. Therefore, management believes it is helpful to distinguish between the effects of changes in these derivatives, net of related hedging activity, and the primary factors that drive profitability of the underlying treaties, namely investment income, fee income (included in other revenues), and interest credited. These fluctuations are considered unrealized by management and do not affect current cash flows, crediting rates or spread performance on the underlying treaties.

The following table summarizes the asset-intensive results and quantifies the impact of these embedded derivatives for the periods presented. Revenues before certain derivatives, benefits and expenses before certain derivatives, and income before income taxes and certain derivatives, should not be viewed as substitutes for GAAP revenues, GAAP benefits and expenses, and GAAP income before income taxes.

For the year ended December 31, (dollars in thousands)	2016	2015	2014
Revenues:			
Total revenues	\$ 755,585	\$ 569,785	\$ 926,944
Less:			
Embedded derivatives – modco/funds withheld treaties	58,737	(101,300)	201,464
Guaranteed minimum benefit riders and related free standing derivatives	(39,786)	(7,658)	(34,825)
Revenues before certain derivatives	736,634	678,743	760,305
Benefits and expenses:			
Total benefits and expenses	531,443	416,839	676,258
Less:			
Embedded derivatives – modco/funds withheld treaties	40,077	(58,754)	128,872
Guaranteed minimum benefit riders and related free standing derivatives	(10,937)	1,750	(9,461)
Equity-indexed annuities	(11,046)	(2,686)	2,371
Benefits and expenses before certain derivatives	513,349	476,529	554,476
Income (loss) before income taxes:			
Income before income taxes	224,142	152,946	250,686
Less:			
Embedded derivatives – modco/funds withheld treaties	18,660	(42,546)	72,592
Guaranteed minimum benefit riders and related free standing derivatives	(28,849)	(9,408)	(25,364)
Equity-indexed annuities	11,046	2,686	(2,371)
Income before income taxes and certain derivatives	\$ 223,285	\$ 202,214	\$ 205,829

Embedded Derivatives - Modco/Funds Withheld Treaties - Represents the change in the fair value of embedded derivatives on funds withheld at interest associated with treaties written on a modco or funds withheld basis. The fair value changes of embedded derivatives on funds withheld at interest associated with treaties written on a modco or funds withheld basis are reflected in revenues, while the related impact on deferred acquisition expenses is reflected in benefits and expenses. The Company's utilization of a credit valuation adjustment did not have a material effect on the change in fair value of these embedded derivatives for the years ended December 31, 2016, 2015 and 2014.

The change in fair value of the embedded derivatives - modco/funds withheld treaties increased (decreased) income before income taxes by \$18.7 million, \$(42.5) million and \$72.6 million in 2016, 2015 and 2014, respectively. The increase in income in 2016 was primarily due to tightening credit spreads. The decrease in income in 2015 was primarily due to widening credit spreads and increasing risk-free rates. The increase in income in 2014 was primarily due to tightening credit spreads.

Guaranteed Minimum Benefit Riders - Represents the impact related to guaranteed minimum benefits associated with the Company's reinsurance of variable annuities. The fair value changes of the guaranteed minimum benefits along with the changes in fair value of the free standing derivatives (interest rate swaps, financial futures and equity options), purchased by the Company to substantially hedge the liability are reflected in revenues, while the related impact on deferred acquisition expenses is reflected in benefits and expenses. The Company's utilization of a credit valuation adjustment did not have a material effect on the change in fair value of these embedded derivatives for the years ended December 31, 2016, 2015 and 2014.

The change in fair value of the guaranteed minimum benefits, after allowing for changes in the associated free standing derivatives, decreased income before income taxes by \$28.8 million, \$9.4 million and \$25.4 million in 2016, 2015 and 2014, respectively. The decrease in income for all periods is primarily due to the annual update of best estimate actuarial assumptions to account for lower policyholder termination experience.

Equity-Indexed Annuities - Represents changes in the liability for equity-indexed annuities in excess of changes in account value, after adjustments for related deferred acquisition expenses. The change in fair value of embedded derivative liabilities associated with equity-indexed annuities increased (decreased) income before income taxes by \$11.0 million, \$2.7 million and \$(2.4) million, in 2016, 2015 and 2014, respectively. The increase in income in 2016 was due to lower market volatility.

Discussion and analysis before certain derivatives

Income before income taxes and certain derivatives increased by \$21.1 million and decreased by \$3.6 million in 2016 and 2015, respectively. The increase in income in 2016, was primarily due to the full year impact in 2016 from the acquisition of Aurora National in the second quarter of 2015 and investment related gains (losses) associated with funds withheld and coinsurance

portfolios, net of the corresponding impact to deferred acquisition costs. The decrease in income in 2015 was primarily due to the impact of lower fees received from the prepayment of commercial mortgage loans (variable investment income) and lower investment related gains (losses) associated with funds withheld and coinsurance portfolios, net of the corresponding impact to deferred acquisition costs, which were partially offset by income from the acquisition of Aurora National. Funds withheld capital gains (losses) are reported through investment income while coinsurance activity is reflected in investment related gains (losses), net.

Revenue before certain derivatives increased by \$57.9 million and decreased by \$81.6 million in 2016 and 2015, respectively. The increase in 2016 was primarily due to the increase in fair value of equity options associated with the reinsurance of certain EIAs and the full year impact in 2016 from the acquisition of Aurora National in the second quarter of 2015. The decrease in 2015 was primarily due to the decline in fair value of equity options associated with the reinsurance of certain EIAs partially offset by the revenue from the acquisition of Aurora National. The effect on investment income related to equity options is substantially offset by a corresponding change in interest credited.

Benefits and expenses before certain derivatives increased by \$36.8 million and decreased by \$77.9 million in 2016 and 2015, respectively. The increase in 2016 was primarily due to higher interest credited associated with the reinsurance of certain EIAs and the full year impact in 2016 from the acquisition of Aurora in the second quarter of 2015. The decrease in 2015 was primarily due to lower interest credited associated with the reinsurance of certain EIAs partially offset by the benefits from the acquisition of Aurora National. The effect on interest credited related to equity options is substantially offset by a corresponding change in investment income.

The invested asset base supporting this segment increased to \$13.2 billion as of December 31, 2016 from \$12.9 billion as of December 31, 2015. The increase in the asset base in 2016 is primarily due to growth in existing coinsurance transactions open to new production, which was partially offset by the expected run-off from closed block transactions. As of December 31, 2016 and 2015, \$4.0 billion and \$4.1 billion, respectively, of the invested assets were funds withheld at interest, of which 99.0% and 98.6%, respectively, was associated with one client.

Financial Solutions - Financial Reinsurance

Financial Reinsurance within the U.S. Financial Solutions segment income before income taxes consists primarily of net fees earned on financial reinsurance transactions. Additionally, a portion of the business is brokered business in which the Company does not participate in the assumption of risk. The fees earned from financial reinsurance contracts and brokered business are reflected in other revenues, and the fees paid to retrocessionaires are reflected in policy acquisition costs and other insurance expenses.

Income before income taxes increased by \$4.2 million, or 7.7%, and \$2.8 million, or 5.3%, in 2016 and 2015, respectively. The increases in 2016 and 2015 were primarily related to the growth from new transactions.

At December 31, 2016, 2015 and 2014, the amount of reinsurance assumed from client companies, as measured by pre-tax statutory surplus, risk based capital and other financial reinsurance structures, was \$8.8 billion, \$7.2 billion and \$6.0 billion, respectively. The increases in both 2016 and 2015 can primarily be attributed to an increase in the number of new transactions executed each year and is consistent with the increase in related income. Fees earned from this business can vary significantly depending on the size of the transactions and the timing of their completion and, therefore, can fluctuate from period to period.

Canada Operations

The Company conducts reinsurance business in Canada primarily through RGA Canada, which assists clients with capital management activity and mortality and morbidity risk management. The Canada operations are primarily engaged in Traditional reinsurance, which consists mainly of traditional individual life reinsurance, as well as creditor, group life and health, critical illness and disability reinsurance. Creditor insurance covers the outstanding balance on personal, mortgage or commercial loans in the event of death, disability or critical illness and is generally shorter in duration than traditional individual life insurance. The Canada Financial Solutions segment consists of longevity and financial reinsurance.

For the year ended December 31, 2016 (dollars in thousands)	Traditional	Financial Solutions	Total Canada
Revenues:			
Net premiums	\$ 928,642	\$ 38,701	\$ 967,343
Investment income, net of related expenses	178,927	2,692	181,619
Investment related gains (losses), net	10,528	—	10,528
Other revenues	(93)	5,545	5,452
Total revenues	1,118,004	46,938	1,164,942
Benefits and expenses:			
Claims and other policy benefits	707,409	36,275	743,684
Interest credited	19	—	19
Policy acquisition costs and other insurance expenses	238,252	1,231	239,483
Other operating expenses	37,619	1,487	39,106
Total benefits and expenses	983,299	38,993	1,022,292
Income before income taxes	\$ 134,705	\$ 7,945	\$ 142,650
For the year ended December 31, 2015 (dollars in thousands)			
	Traditional	Financial Solutions	Total Canada
Revenues:			
Net premiums	\$ 838,894	\$ 37,969	\$ 876,863
Investment income, net of related expenses	182,621	1,436	184,057
Investment related gains (losses), net	(1,503)	—	(1,503)
Other revenues	3,000	5,629	8,629
Total revenues	1,023,012	45,034	1,068,046
Benefits and expenses:			
Claims and other policy benefits	670,459	29,251	699,710
Interest credited	18	—	18
Policy acquisition costs and other insurance expenses	192,729	552	193,281
Other operating expenses	35,631	1,329	36,960
Total benefits and expenses	898,837	31,132	929,969
Income before income taxes	\$ 124,175	\$ 13,902	\$ 138,077
For the year ended December 31, 2014 (dollars in thousands)			
	Traditional	Financial Solutions	Total Canada
Revenues:			
Net premiums	\$ 953,389	\$ 21,192	\$ 974,581
Investment income, net of related expenses	193,610	2,595	196,205
Investment related gains (losses), net:	4,445	80	4,525
Other revenues	2,071	4,483	6,554
Total revenues	1,153,515	28,350	1,181,865
Benefits and expenses:			
Claims and other policy benefits	784,437	20,116	804,553
Interest credited	33	—	33
Policy acquisition costs and other insurance expenses	234,599	581	235,180
Other operating expenses	39,011	1,388	40,399
Total benefits and expenses	1,058,080	22,085	1,080,165
Income before income taxes	\$ 95,435	\$ 6,265	\$ 101,700

Income before income taxes increased by \$4.6 million, or 3.3%, and \$36.4 million, or 35.8%, in 2016 and 2015, respectively. The increase in income for 2016 was primarily due to an increase in creditor premiums and an increase in investment related gains (losses), net, partially offset by less favorable traditional individual life mortality experience and unfavorable

experience on longevity business, as compared to 2015. The increase in income in 2015 was primarily due to favorable traditional individual life mortality experience, compared to the prior year. Foreign currency exchange fluctuation in the Canadian dollar resulted in a decrease in income before income taxes of approximately \$6.4 million and \$22.3 million in 2016 and 2015, respectively.

Traditional Reinsurance

Income before income taxes increased by \$10.5 million, or 8.5%, and \$28.7 million, or 30.1%, in 2016 and 2015, respectively. The increase in income before income taxes in 2016 was primarily due to an increase in creditor premiums and a \$12.0 million increase in investment related gains (losses), net, partially offset by a less favorable traditional individual life mortality experience, as compared to 2015. The increase in income before income taxes in 2015 was primarily due to favorable traditional life mortality experience compared to 2014. Foreign currency exchange fluctuation in the Canadian dollar resulted in a decrease in income before income taxes of approximately \$5.8 million and \$20.3 million in 2016 and 2015, respectively.

Net premiums increased by \$89.7 million, or 10.7%, and decreased by \$114.5 million, or 12.0%, in 2016 and 2015, respectively. The increase in 2016 was primarily due to an increase in creditor premiums of \$70.0 million and premiums from new business production partially offset by adverse currency exchange fluctuation of \$33.0 million. The decrease in 2015 was primarily due to adverse currency exchange fluctuation of \$130.4 million and a decrease in creditor premiums of \$36.3 million partially offset by premiums from new business production. The segment added new business production, measured by face amount of insurance in force, of \$34.9 billion, \$38.6 billion and \$48.3 billion during 2016, 2015 and 2014, respectively.

Net investment income decreased \$3.7 million, or 2.0%, and \$11.0 million, or 5.7%, in 2016 and 2015, respectively. The effect of changes in the Canadian dollar exchange rates resulted in a decrease in net investment income of approximately \$6.6 million and \$28.9 million in 2016 and 2015, respectively. These decreases were offset somewhat by growth in the invested asset base.

Loss ratios for the segment were 76.2%, 79.9% and 82.3% in 2016, 2015 and 2014, respectively. The decrease in the 2016 loss ratio was due to the aforementioned increase in creditor premiums partially offset by less favorable life mortality experience. The decrease in the 2015 loss ratio is due to favorable individual life mortality experience. Loss ratios for the individual life mortality business were 93.5%, 92.4% and 99.6% in 2016, 2015 and 2014, respectively. Historically, the loss ratio increased primarily as the result of several large permanent level premium in force blocks assumed in 1997 and 1998. These blocks are mature blocks of long-term permanent level premium business in which mortality as a percentage of net premiums is expected to be higher than historical ratios. The nature of permanent level premium policies requires the Company to set up actuarial liabilities and invest the amounts received in excess of early-year claims costs to fund claims in later years when premiums, by design, continue to be level as compared to expected increasing mortality or claim costs. As such, investment income becomes a more significant component of profitability of these in force blocks. Excluding creditor business, claims and other policy benefits, as a percentage of net premiums and investment income were 73.7%, 72.2% and 77.8% in 2016, 2015 and 2014, respectively.

Policy acquisition costs and other insurance expenses as a percentage of net premiums for traditional individual life business were 25.7%, 23.0% and 24.6% in 2016, 2015 and 2014, respectively. Overall, while these ratios are expected to remain in a predictable range, they may fluctuate from period to period due to varying allowance levels and product mix. In addition, the amortization pattern of previously capitalized amounts, which are subject to the form of the reinsurance agreement and the underlying insurance policies, may vary.

Other operating expenses increased by \$2.0 million, or 5.6%, and decreased by \$3.4 million, or 8.7%, in 2016 and 2015, respectively. The effect of changes in the Canadian dollar exchange rates resulted in decreases in operating expenses of approximately \$1.2 million and \$5.5 million in 2016 and 2015, respectively. The increase in other operating expenses in 2016 is primarily due to higher compensation costs. Other operating expenses as a percentage of net premiums were 4.1%, 4.2% and 4.1% in 2016, 2015 and 2014, respectively.

Financial Solutions

Income before income taxes decreased by \$6.0 million, or 42.8%, and increased by \$7.6 million, or 121.9%, in 2016 and 2015, respectively. The decrease in income before income taxes in 2016 was primarily due to unfavorable experience on longevity business. The increase in income in 2015 was primarily due to fees associated with financial reinsurance and income from new longevity reinsurance transactions. Foreign currency exchange fluctuation in the Canadian dollar resulted in a decrease in income before income taxes of approximately \$0.7 million and \$1.9 million in 2016 and 2015, respectively.

Net premiums increased \$0.7 million, or 1.9%, and \$16.8 million, or 79.2%, in 2016 and 2015, respectively. The increase in 2015 is the result of new longevity reinsurance transactions completed during the year. Foreign currency exchange fluctuation in the Canadian dollar resulted in a decrease in net premiums of approximately \$1.4 million and \$6.0 million in 2016 and 2015, respectively.

Net investment income increased by \$1.3 million, or 87.5%, and decreased by \$1.2 million, or 44.7%, in 2016 and 2015, respectively. The increase in net investment income in 2016 was primarily due to a growth in the invested asset base. Conversely, the decrease in net investment income in 2015 was primarily due to a reduction in the invested asset base.

Other revenues decreased by \$0.1 million and increased by \$1.1 million in 2016 and 2015, respectively. The increase in other revenues in 2015 is primarily due to fees associated with financial reinsurance.

Claims and other policy benefits increased \$7.0 million, or 24.0%, and \$9.1 million, or 45.4%, in 2016 and 2015, respectively. These increases were primarily due to claims experience on longevity business. The effect of changes in the Canadian dollar exchange rates resulted in a decrease in claims and other policy benefits of approximately \$0.8 million and \$4.9 million in 2016 and 2015, respectively.

Europe, Middle East and Africa Operations

The Europe, Middle East and Africa (“EMEA”) segment includes business generated by its offices principally in the United Kingdom (“UK”), South Africa, France, Germany, Ireland, Italy, the Netherlands, Poland, Spain and the United Arab Emirates. EMEA consists of two major segments: Traditional and Financial Solutions. The Traditional segment primarily provides reinsurance through yearly renewable term and coinsurance agreements on a variety of life, health and critical illness products. Reinsurance agreements may be facultative or automatic agreements covering primarily individual risks and, in some markets, group risks. The Financial Solutions segment consists of reinsurance and other transactions associated with longevity closed blocks, payout annuities, capital management solutions and financial reinsurance.

For the year ended December 31, 2016 (dollars in thousands)	<u>Traditional</u>	<u>Financial Solutions</u>	<u>Total EMEA</u>
Revenues:			
Net premiums	\$ 1,140,062	\$ 180,271	\$ 1,320,333
Investment income, net of related expenses	50,301	125,282	175,583
Investment related gains (losses), net	5	13,537	13,542
Other revenues	4,781	21,428	26,209
Total revenues	<u>1,195,149</u>	<u>340,518</u>	<u>1,535,667</u>
Benefits and expenses:			
Claims and other policy benefits	999,005	164,883	1,163,888
Interest credited	—	13,131	13,131
Policy acquisition costs and other insurance expenses	63,848	6	63,854
Other operating expenses	102,237	24,491	126,728
Total benefits and expenses	<u>1,165,090</u>	<u>202,511</u>	<u>1,367,601</u>
Income before income taxes	<u>\$ 30,059</u>	<u>\$ 138,007</u>	<u>\$ 168,066</u>
For the year ended December 31, 2015 (dollars in thousands)			
	<u>Traditional</u>	<u>Financial Solutions</u>	<u>Total EMEA</u>
Revenues:			
Net premiums	\$ 1,121,540	\$ 171,830	\$ 1,293,370
Investment income, net of related expenses	51,370	73,432	124,802
Investment related gains (losses), net	8,397	10,170	18,567
Other revenues	9,435	31,234	40,669
Total revenues	<u>1,190,742</u>	<u>286,666</u>	<u>1,477,408</u>
Benefits and expenses:			
Claims and other policy benefits	969,596	161,917	1,131,513
Interest credited	9,629	—	9,629
Policy acquisition costs and other insurance expenses	63,042	(1,100)	61,942
Other operating expenses	100,065	17,404	117,469
Total benefits and expenses	<u>1,142,332</u>	<u>178,221</u>	<u>1,320,553</u>
Income before income taxes	<u>\$ 48,410</u>	<u>\$ 108,445</u>	<u>\$ 156,855</u>

For the year ended December 31, 2014

(dollars in thousands)

	Traditional	Financial Solutions	Total EMEA
Revenues:			
Net premiums	\$ 1,157,407	\$ 216,562	\$ 1,373,969
Investment income, net of related expenses	52,086	55,043	107,129
Investment related gains (losses), net	23,192	15,522	38,714
Other revenues	2,364	35,671	38,035
Total revenues	1,235,049	322,798	1,557,847
Benefits and expenses:			
Claims and other policy benefits	997,760	204,110	1,201,870
Interest credited	15,571	—	15,571
Policy acquisition costs and other insurance expenses	56,972	(2,356)	54,616
Other operating expenses	104,441	19,707	124,148
Total benefits and expenses	1,174,744	221,461	1,396,205
Income before income taxes	\$ 60,305	\$ 101,337	\$ 161,642

Income before income taxes increased by \$11.2 million, or 7.1%, and decreased by \$4.8 million, or 3.0%, in 2016 and 2015, respectively. The increase in income before income taxes for 2016 was primarily due to increased business volume and favorable experience related to payout annuity and longevity business offset partly by unfavorable mortality and morbidity experience. The decrease in income before income taxes in 2015 was primarily due to unfavorable foreign currency exchange fluctuations partially offset by increased payout annuity and longevity business volumes. Foreign currency exchange fluctuations contributed to a decrease in income before income taxes of approximately \$20.4 million and \$15.4 million in 2016 and 2015, respectively.

Traditional Reinsurance

Income before income taxes decreased by \$18.4 million, or 37.9%, and \$11.9 million, or 19.7%, in 2016 and 2015, respectively. The decrease in income before income taxes in 2016 was primarily due to unfavorable claims experience. The decrease in income before income taxes in 2015 was primarily due to unfavorable claims experience and foreign currency exchange fluctuations. Foreign currency exchange fluctuations contributed to a decrease in income before income taxes of approximately \$1.0 million and \$4.2 million in 2016 and 2015, respectively.

Net premiums increased by \$18.5 million, or 1.7%, and decreased by \$35.9 million, or 3.1%, in 2016 and 2015, respectively. The increase in 2016 was primarily due to increased individual life and health premiums somewhat offset by unfavorable foreign currency exchange fluctuations. The decrease in 2015 was the result of unfavorable foreign currency fluctuations. The segment added new business production, measured by face amount of insurance in force, of \$169.8 billion, \$171.6 billion and \$175.2 billion during 2016, 2015 and 2014, respectively. The face amount of reinsurance in force totaled approximately \$603.0 billion, \$602.7 billion, and \$561.1 billion at December 31, 2016, 2015 and 2014, respectively. Foreign currency exchange fluctuations contributed to a decrease in net premiums of approximately \$113.1 million and \$119.2 million in 2016 and 2015, respectively. The segment's primary currencies are the British pound, the Euro and the South African rand.

A portion of the net premiums for the segment, in each period presented, relates to reinsurance of critical illness coverage, primarily in the UK. This coverage provides a benefit in the event of the diagnosis of a pre-defined critical illness. Net premiums earned from this coverage totaled \$203.4 million, \$233.2 million and \$257.7 million in 2016, 2015 and 2014, respectively.

Net investment income decreased by \$1.1 million, or 2.1%, and \$0.7 million, or 1.4%, in 2016 and 2015, respectively. These decreases were primarily due to unfavorable foreign exchange fluctuations, offset partly by an increase in the invested asset base related to increased business volume. Foreign currency exchange fluctuations resulted in a decrease in net investment income of approximately \$4.5 million and \$6.1 million in 2016 and 2015, respectively.

Investment related gains decreased by \$8.4 million, or 99.9%, and \$14.8 million, or 63.8%, in 2016 and 2015, respectively. Revenue related to unit-linked products were included in investment related gains in 2015 and 2014. In 2016, revenue related to unit-linked products is included in investment income within the Financial Solutions segment. The decrease in investment related gains in 2015 relates to capital gains (losses) and a market value change in funds backing unit-linked products, which is substantially offset by a corresponding change in interest credited expense.

Other revenues decreased by \$4.7 million, or 49.3% and increased by \$7.1 million, or 299.1%, in 2016 and 2015, respectively. These variances are primarily due to foreign currency transactions.

Loss ratios for this segment were 87.6%, 86.5% and 86.2% in 2016, 2015 and 2014, respectively. The changes in the loss ratios in 2016 and 2015 were due to variability in life and critical illness claims experience. Management views recent claims experience as normal volatility that is inherent in the business.

Interest credited expense decreased by \$9.6 million, or 100.0%, and \$5.9 million, or 38.2%, in 2016 and 2015, respectively. In 2016, interest credited related to unit-linked products and the related investment income is reflected in the Financial Solutions segment. Interest credited in 2015 and 2014 relates to amounts credited to the contractholders of unit-linked products. The effect on interest credited related to unit-linked products is substantially offset by a corresponding change in investment income and investment related gains (losses), net.

Policy acquisition costs and other insurance expenses as a percentage of net premiums were 5.6%, 5.6% and 4.9% for 2016, 2015 and 2014, respectively. These percentages fluctuate due to timing of client company reporting, variations in the mixture of business and the relative maturity of the business. In addition, as the segment grows, renewal premiums, which have lower allowances than first-year premiums, represent a greater percentage of the total net premiums.

Other operating expenses increased by \$2.2 million, or 2.2%, and decreased by \$4.4 million, or 4.2%, in 2016 and 2015, respectively. The increase in 2016 was in line with expected expense levels to support business growth coupled with a higher level of incentive compensation expense. The decrease in 2015 was primarily due to the effect of foreign currency fluctuations and a decrease in incentive compensation expense. Foreign currency exchange fluctuations resulted in a decrease in operating expenses of approximately \$8.1 million and \$14.6 million 2016 and 2015, respectively. Other operating expenses as a percentage of net premiums totaled 9.0%, 8.9% and 9.0% in 2016, 2015 and 2014, respectively.

Financial Solutions

Income before income taxes increased by \$29.6 million, or 27.3%, and \$7.1 million, or 7.0%, in 2016 and 2015, respectively. The increases in income before income taxes were primarily due to increased business volume, coupled with favorable experience in payout annuity and longevity treaties. Foreign currency exchange fluctuations contributed to a decrease in income before income taxes of approximately \$19.4 million and \$11.3 million in 2016 and 2015, respectively.

Net premiums increased by \$8.4 million, or 4.9%, and decreased by \$44.7 million, or 20.7%, in 2016 and 2015, respectively. The increase in net premiums in 2016 was primarily due to premiums on longevity closed blocks. Net premiums decreased in 2015 due to a new retrocession agreement, executed for risk management purposes, which cedes a portion of longevity risk to third parties. Foreign currency exchange fluctuations contributed to a decrease in net premiums of approximately \$22.5 million and \$12.6 million in 2016 and 2015, respectively.

Net investment income increased \$51.9 million, or 70.6%, and \$18.4 million, or 33.4%, in 2016 and 2015, respectively. The increase in 2016 is primarily due to an increase in the invested asset base related to a payout annuity treaty executed in the fourth quarter of 2015. In addition, revenue totaling \$13.1 million in 2016 related to unit-linked products is included in the Financial Solutions segment investment income. The effect on investment income related to unit-linked products is substantially offset by a corresponding change in interest credited. The increase in 2015 was primarily due to an increase in the invested asset base related to payout annuity transactions.

Other revenues decreased by \$9.8 million, or 31.4% and \$4.4 million, or 12.4%, in 2016 and 2015, respectively. The decrease in 2016 in other revenues relate to reduced fee income associated with financial reinsurance treaties terminated at the end of 2015. The decrease in other revenues in 2015 relates to unfavorable foreign currency exchange fluctuations. Fees earned from this business can vary significantly depending on the size of the transactions and the timing of their completion and, therefore, can fluctuate from period to period.

Claims and other policy benefits increased \$3.0 million, or 1.8%, and decreased by \$42.2 million, or 20.7%, in 2016 and 2015, respectively. Claims and other policy benefits increased in 2016 due to increased benefits associated with payout annuity reinsurance transactions executed in the fourth quarter of 2015, largely offset by favorable policy benefit experience. Claims and other policy benefits decreased in 2015 due to the aforementioned retrocession agreement which retrocedes a portion of longevity risk to third parties. This reduction was partially offset by increased benefits associated with payout annuity reinsurance (longevity) transactions executed in late 2014.

Interest credited in 2016 relates to amounts credited to the contractholders of unit-linked products. In 2015 and 2014, interest credited related to unit-linked products was reflected in Traditional Reinsurance. The effect on interest credited related to unit-linked products is substantially offset by a corresponding change in investment income.

Other operating expenses increased by \$7.1 million, or 40.7%, and decreased by \$2.3 million, or 11.7%, in 2016 and 2015, respectively. The increase in 2016 was primarily due to administration costs related to increased longevity business, increased incentive compensation expense and an increase in expenses related to an acquisition in the Netherlands completed in the fourth quarter of 2015. The decrease in 2015 was primarily due to the effect of foreign currency fluctuations. Foreign currency exchange fluctuations resulted in a decrease in operating expenses of approximately \$1.4 million and \$2.0 million 2016 and 2015, respectively.

Asia Pacific Operations

The Asia Pacific operations include business generated by its offices principally in Australia, China, Hong Kong, India, Japan, Malaysia, New Zealand, Singapore, South Korea and Taiwan. The Traditional segment's principal types of reinsurance include individual and group life and health, critical illness, disability and superannuation. Superannuation is the Australian government mandated compulsory retirement savings program. Superannuation funds accumulate retirement funds for employees, and, in addition, typically offer life and disability insurance coverage. The Financial Solutions segment includes financial reinsurance, asset-intensive and certain disability and life blocks. Reinsurance agreements may be facultative or automatic agreements covering primarily individual risks and in some markets, group risks.

For the year ended December 31, 2016

(dollars in thousands)

	Traditional	Financial Solutions	Total Asia Pacific
Revenues:			
Net premiums	\$ 1,681,505	\$ 5,428	\$ 1,686,933
Investment income, net of related expenses	83,049	23,648	106,697
Investment related gains (losses), net	14	9,436	9,450
Other revenues	6,582	24,870	31,452
Total revenues	1,771,150	63,382	1,834,532
Benefits and expenses:			
Claims and other policy benefits	1,345,951	25,180	1,371,131
Interest credited	—	12,796	12,796
Policy acquisition costs and other insurance expenses	163,036	6,071	169,107
Other operating expenses	148,235	15,272	163,507
Total benefits and expenses	1,657,222	59,319	1,716,541
Income before income taxes	\$ 113,928	\$ 4,063	\$ 117,991

For the year ended December 31, 2015

(dollars in thousands)

	Traditional	Financial Solutions	Total Asia Pacific
Revenues:			
Net premiums	\$ 1,551,586	\$ 19,474	\$ 1,571,060
Investment income, net of related expenses	80,549	18,678	99,227
Investment related gains (losses), net	—	(531)	(531)
Other revenues	6,222	18,960	25,182
Total revenues	1,638,357	56,581	1,694,938
Benefits and expenses:			
Claims and other policy benefits	1,208,984	16,295	1,225,279
Interest credited	—	4,471	4,471
Policy acquisition costs and other insurance expenses	187,976	2,554	190,530
Other operating expenses	135,743	13,642	149,385
Total benefits and expenses	1,532,703	36,962	1,569,665
Income before income taxes	\$ 105,654	\$ 19,619	\$ 125,273

For the year ended December 31, 2014

(dollars in thousands)

	Traditional	Financial Solutions	Total Asia Pacific
Revenues:			
Net premiums	\$ 1,540,910	\$ 34,030	\$ 1,574,940
Investment income, net of related expenses	84,489	17,972	102,461
Investment related gains (losses), net	2,939	(4,471)	(1,532)
Other revenues	58,098	22,751	80,849
Total revenues	1,686,436	70,282	1,756,718
Benefits and expenses:			
Claims and other policy benefits	1,208,611	41,455	1,250,066
Interest credited	—	896	896
Policy acquisition costs and other insurance expenses	258,812	2,296	261,108
Other operating expenses	128,411	13,942	142,353
Total benefits and expenses	1,595,834	58,589	1,654,423
Income before income taxes	\$ 90,602	\$ 11,693	\$ 102,295

Income before income taxes decreased by \$7.3 million, or 5.8%, and increased by \$23.0 million, or 22.5%, in 2016 and 2015, respectively. The decrease in income before income taxes in 2016 was primarily attributable to unfavorable individual disability claims experience in Australia and unfavorable lapse experience from a closed Financial Solutions treaty in Japan. These unfavorable variances are partially offset by favorable claims experience from offices in Asia and gains on derivatives associated with the hedging programs to mitigate currency risks. The increase in income before income taxes in 2015 is primarily due to favorable claims experience compared to the prior year, most notably in Australia. Foreign currency exchange fluctuations contributed to an increase in income before income taxes of approximately \$0.7 million and a decrease of \$10.9 million in 2016 and 2015, respectively.

Traditional Reinsurance

Income before income taxes increased by \$8.3 million, or 7.8%, and \$15.1 million, or 16.6%, in 2016 and 2015, respectively. The increase in income before income taxes in 2016 was primarily driven by improved mortality experience in Asia. Unfavorable individual disability claims experience in Australia partially offset the increase in income in 2016. The increase in income before income taxes in 2015 was primarily due to favorable claims experience compared to the prior year. Foreign currency exchange fluctuations contributed to a decrease in income before income taxes of approximately \$0.8 million and \$8.0 million in 2016 and 2015, respectively.

Net premiums increased by \$129.9 million, or 8.4%, and \$10.7 million, or 0.7%, in 2016 and 2015, respectively. The increases in premiums for 2016 and 2015 were driven by both new and existing business written throughout the segment, partially offset by the termination of a large treaty in Australia in November 2015. The increase in 2015 was also largely offset by adverse foreign currency exchange fluctuations. The segment added new business production, measured by face amount of insurance in force, of \$73.7 billion, \$76.9 billion and \$81.6 billion during 2016, 2015 and 2014, respectively. The face amount of reinsurance in force totaled approximately \$492.2 billion, \$462.7 billion, and \$494.0 billion at December 31, 2016, 2015 and 2014, respectively. Foreign currency fluctuations unfavorably affected the face amount of reinsurance in force by \$4.7 billion and \$42.1 billion in 2016 and 2015, respectively. Foreign currency exchange fluctuations contributed to an increase in net premiums of approximately \$3.3 million and a decrease of \$198.2 million in 2016 and 2015, respectively.

A portion of the net premiums for the segment, in each period presented, relates to reinsurance of critical illness coverage. This coverage provides a benefit in the event of the diagnosis of a pre-defined critical illness. Reinsurance of critical illness in the Asia Pacific operations is offered primarily in South Korea, Australia and Hong Kong. Net premiums from this coverage totaled \$398.3 million, \$312.6 million, and \$275.7 million in 2016, 2015 and 2014, respectively.

Net investment income increased \$2.5 million, or 3.1%, and decreased by \$3.9 million, or 4.7%, in 2016 and 2015, respectively. The increase in 2016 was primarily due to a higher invested asset base largely offset by a lower investment yield. The decrease in net investment income in 2015 was primarily due to unfavorable foreign currency fluctuations and a decline in investment yield.

Other revenues increased by \$0.4 million, or 5.8%, and decreased by \$51.9 million, or 89.3%, in 2016 and 2015, respectively. The decrease in other revenues in 2015 was primarily due to a recapture fee associated with an individual lump sum treaty in Australia along with fees associated with the reinstatement and conversion of an existing treaty in Japan in 2014.

Loss ratios for this segment were 80.0%, 77.9% and 78.4% for 2016, 2015 and 2014, respectively. The increase in the loss ratio in 2016 was primarily due to aforementioned unfavorable individual disability claims experience in Australia and

additional benefit expense associated with a large treaty in Hong Kong due to adjustments associated with delays in client reporting. The slight decrease in the loss ratio in 2015 was primarily due to favorable claims experience and higher premiums.

Policy acquisition costs and other insurance expenses as a percentage of net premiums were 9.7%, 12.1% and 16.8% for 2016, 2015 and 2014, respectively. The decrease in 2016 was due primarily to a \$40.0 million decrease in policy acquisition costs and other insurance expenses due to adjustments associated with delays in client reporting on a large treaty in Hong Kong. The decrease in the ratio in 2015 was primarily attributable to the recognition of the DAC relating to the aforementioned individual lump sum treaty recapture in Australia in 2014. The ratio of policy acquisition costs and other insurance expenses as a percentage of net premiums should generally decline as the business matures; however, the percentage does fluctuate periodically due to variations in the mixture of business and client-related actions.

Other operating expenses increased \$12.5 million, or 9.2%, and \$7.3 million, or 5.7%, in 2016 and 2015, respectively. The 2016 increase in other operating expenses is mainly due to increased compensation costs relating to new positions filled during the second half of 2015, primarily in the growing Asian operations based in Hong Kong. The 2015 increase in other operating expenses is primarily due to an increase in information and technology expenses. Foreign currency exchange fluctuations resulted in an increase in operating expenses of approximately \$0.7 million and a decrease of \$14.3 million in 2016 and 2015, respectively. Other operating expenses as a percentage of net premiums totaled 8.8%, 8.7% and 8.3% in 2016, 2015 and 2014, respectively. The timing of premium flows and the level of costs associated with the entrance into and development of new markets in the Asia Pacific segment may cause other operating expenses as a percentage of net premiums to fluctuate over periods of time.

Financial Solutions

Income before income taxes decreased by \$15.6 million, or 79.3%, and increased by \$7.9 million, or 67.8%, in 2016 and 2015, respectively. The decrease in 2016 was primarily due to unfavorable lapse experience from a closed treaty in Japan, partially offset by gains on derivatives associated with hedging programs to mitigate currency risks. The increase in 2015 in income before income taxes is primarily attributable to favorable experience in disability reinsurance business within the segment. Foreign currency exchange fluctuations contributed to an increase in income before income taxes of approximately \$1.5 million and a decrease of \$2.9 million in 2016 and 2015, respectively.

Net premiums decreased by \$14.0 million, or 72.1%, and \$14.6 million, or 42.8%, in 2016 and 2015, respectively. The decreases were primarily due to policy lapses on a closed treaty in Japan. Foreign currency exchange fluctuations contributed to an increase in net premiums of approximately \$0.2 million and a decrease of \$2.6 million in 2016 and 2015, respectively.

Net investment income increased \$5.0 million, or 26.6%, and \$0.7 million, or 3.9%, in 2016 and 2015, respectively. The increase in investment income in 2016 was primarily due to an increase in invested assets associated with a treaty in Japan that came into effect in late 2015.

Other revenues increased by \$5.9 million, or 31.2%, and decreased by \$3.8 million, or 16.7%, in 2016 and 2015, respectively. The increase in 2016 was primarily due to new transactions. The decrease in 2015 was primarily due to the recapture of certain treaties during the year. The amount of reinsurance assumed from client companies, as measured by pre-tax statutory surplus, risk based capital and other financial reinsurance structures was \$1.5 billion and \$1.2 billion at December 31, 2016 and 2015, respectively. Fees earned from this business can vary significantly depending on the size of the transactions and the timing of their completion and therefore can fluctuate from period to period.

Claims and other policy benefits increased by \$8.9 million, or 54.5%, and decreased by \$25.2 million, or 60.7%, in 2016 and 2015, respectively. The increase in 2016 was attributable to the aforementioned unfavorable lapse experience on a closed treaty in Japan. The decrease in 2015 was attributable to favorable experience on disability reinsurance business in the segment. Management views recent experience as normal short-term volatility that is inherent in the business.

Other operating expenses increased by \$1.6 million, or 11.9%, and decreased by \$0.3 million, or 2.2%, in 2016 and 2015, respectively. The timing of premium flows and the level of costs associated with the entrance into and development of new markets in the Asia Pacific segment may cause other operating expenses to fluctuate over periods of time.

Corporate and Other

Corporate and Other revenues primarily include investment income from unallocated invested assets and investment related gains and losses. Corporate and Other expenses consist of the offset to capital charges allocated to the operating segments within the policy acquisition costs and other insurance income line item, unallocated overhead and executive costs, interest expense related to debt, and the investment income and expense associated with the Company's collateral finance and securitization transactions. Additionally, Corporate and Other includes results from certain wholly-owned subsidiaries and joint ventures that, among other activities, develop and market technology solutions for the insurance industry.

For the year ended December 31, (dollars in thousands)	2016	2015	2014
Revenues:			
Net premiums	\$ 342	\$ 565	\$ 780
Investment income, net of related expenses	117,057	123,450	110,806
Investment related gains (losses), net	51,256	(65,107)	(8,885)
Other revenues	12,301	9,987	7,652
Total revenues	<u>180,956</u>	<u>68,895</u>	<u>110,353</u>
Benefits and expenses:			
Claims and other policy benefits	(9)	38	(4)
Interest credited	2,469	1,028	808
Policy acquisition costs and other insurance income	(100,266)	(87,551)	(83,501)
Other operating expenses	154,554	109,017	96,602
Interest expense	137,623	142,863	96,700
Collateral finance and securitization expense	25,827	22,644	11,441
Total benefits and expenses	<u>220,198</u>	<u>188,039</u>	<u>122,046</u>
Loss before income taxes	<u>\$ (39,242)</u>	<u>\$ (119,144)</u>	<u>\$ (11,693)</u>

Loss before income taxes decreased by \$79.9 million and increased by \$107.5 million in 2016 and 2015, respectively. The decrease in loss before income taxes in 2016 was primarily due to increased net investment related gains of \$116.4 million along with an increase in other revenues and lower interest expense, partially offset by lower investment income and higher operating expenses. The increase in loss before income taxes in 2015 is primarily due to an increase in total investment related losses of \$56.2 million along with an increase of \$46.2 million in interest expense.

Total revenues increased \$112.1 million, or 162.7%, and decreased by \$41.5 million, or 37.6%, in 2016 and 2015, respectively. The increase in revenues in 2016 was primarily caused by increased net investment related gains of \$116.4 million, due to a \$32.7 million reduction in other-than-temporary impairments on fixed maturities and net gains on the sale of fixed maturities, along with an increase in other revenues of \$2.3 million. The decrease in total revenues in 2015 was largely due to the increase in investment related losses of \$56.2 million primarily due to other-than-temporary impairments on fixed maturities of \$48.8 million offset by an increase in investment income, net of related expenses of \$12.6 million due to an increase in allocated invested assets and higher investment yields.

Total benefits and expenses increased by \$32.2 million or 17.1%, and \$66.0 million or 54.1%, in 2016 and 2015, respectively. The increase in total benefits and expenses in 2016 was primarily due to an increase of other operating expenses of \$45.5 million, and partially offset by an increase in other insurance income of \$12.7 million, as well as a decrease in interest expense of \$5.2 million. The reduction in interest expense is mainly attributable to a \$15.7 million reduction in tax-related interest expense resulting from the effective settlement of uncertain tax positions and a \$10.8 million reduction in interest expense related to the conversion of the Company's junior subordinated debentures to a floating rate in December 2015. These reductions in interest expense are largely offset by \$21.9 million of additional interest expense related to the issuance of \$800.0 million in long-term debt during 2016. The increase in other insurance income is primarily related to the offset to capital charges allocated to the operating segments. The increase in total benefits and expenses in 2015 was largely due to an increase of \$46.2 million in interest expense due to the prior year accruals related to uncertain tax positions no longer being accrued in 2015, an increase of \$12.4 million in other operating expenses primarily related to compensation and an increase in collateral finance and securitization expense due to the issuance of \$300.0 million of securitization notes in the fourth quarter of 2014.

Deferred Acquisition Costs

DAC related to interest-sensitive life and investment-type contracts is amortized over the lives of the contracts, in relation to the present value of estimated gross profits ("EGP") from mortality, investment income, and expense margins. The EGP for asset-intensive products include the following components: (1) estimates of fees charged to policyholders to cover mortality, surrenders and maintenance costs; (2) expected interest rate spreads between income earned and amounts credited to policyholder accounts; and (3) estimated costs of administration. EGP is also reduced by the Company's estimate of future losses due to defaults

in fixed maturity securities as well as the change in reserves for embedded derivatives. DAC is sensitive to changes in assumptions regarding these EGP components, and any change in such assumptions could have an effect on the Company's profitability.

The Company periodically reviews the EGP valuation model and assumptions so that the assumptions reflect best estimates of future experience. Two assumptions are considered to be most significant: (1) estimated interest spread, and (2) estimated future policy lapses. As of December 31, 2016, the Company had \$582.0 million of DAC related to asset-intensive products, all within the U.S. and Latin America Financial Solutions segment. The following table reflects the possible change that would occur in a given year if assumptions, as a percentage of current DAC related to asset-intensive products, are changed as illustrated:

Quantitative Change in Significant Assumptions	One-Time Increase in DAC	One-Time Decrease in DAC
Estimated interest spread increasing (decreasing) 25 basis points from the current spread	3.62%	(3.83)%
Estimated future policy lapse rates decreasing (increasing) 20% on a permanent basis (including surrender charges)	2.60%	(2.13)%

In general, a change in assumption that improves the Company's expectations regarding EGP is going to have the effect of deferring the amortization of DAC into the future, thus increasing earnings and the current DAC balance. DAC can be no greater than the initial DAC balance plus interest and would be subject to recoverability testing which is ignored for purposes of this analysis. Conversely, a change in assumption that decreases EGP will have the effect of speeding up the amortization of DAC, thus reducing earnings and lowering the DAC balance. The Company also adjusts DAC to reflect changes in the unrealized gains and losses on available-for-sale fixed maturity securities since these changes affect EGP. This adjustment to DAC is reflected in accumulated other comprehensive income.

The DAC associated with the Company's non-asset-intensive business is less sensitive to changes in estimates for investment yields, mortality and lapses. In accordance with generally accepted accounting principles, the estimates include provisions for the risk of adverse deviation and are not adjusted unless experience significantly deteriorates to the point where a premium deficiency exists.

The following table displays DAC balances for the Traditional and Financial Solutions segments as of December 31, 2016:

(dollars in thousands)	Traditional	Financial Solutions	Total
U.S. and Latin America	\$ 1,818,211	\$ 582,031	\$ 2,400,242
Canada	201,149	—	201,149
Europe, Middle East and Africa	206,837	—	206,837
Asia Pacific	512,123	18,254	530,377
Total	\$ 2,738,320	\$ 600,285	\$ 3,338,605

As of December 31, 2016, the Company estimates that all of its DAC balance is collateralized by surrender fees due to the Company and the reduction of policy liabilities, in excess of termination values, upon surrender or lapse of a policy.

Liquidity and Capital Resources

Overview

The Company believes that cash flows from the source of funds available to it will provide sufficient cash flows for the next twelve months to satisfy the current liquidity requirements of RGA, Inc. and its subsidiaries under various scenarios that include the potential risk of early recapture of reinsurance treaties, market events and higher than expected claims. The Company performs periodic liquidity stress testing to ensure its asset portfolio includes sufficient high quality liquid assets that could be utilized to bolster its liquidity position under stress scenarios. These assets could be utilized as collateral for secured borrowing transactions with various third parties or by selling the securities in the open market if needed. The Company's liquidity requirements have been and will continue to be funded through net cash flows from operations. However, in the event of significant unanticipated cash requirements beyond normal liquidity needs, the Company has multiple liquidity alternatives available based on market conditions and the amount and timing of the liquidity need. These alternatives include borrowings under committed credit facilities, secured borrowings, the ability to issue long-term debt, preferred securities or common equity and, if necessary, the sale of invested assets subject to market conditions.

Current Market Environment

The current interest rate environment in select markets, primarily the U.S. and Canada, continues to negatively affect the Company's earnings. The Company's average investment yield, excluding spread related business, for 2016 was at 4.57%, 25 basis points below 2015. The Company's insurance liabilities, in particular its annuity products, are sensitive to changing market factors. Gross unrealized gains on fixed maturity and equity securities available-for-sale were \$2,246.5 million and \$1,947.0

million at December 31, 2016 and 2015, respectively. Gross unrealized losses totaled \$374.9 million and \$627.5 million at December 31, 2016 and 2015, respectively.

The Company continues to be in a position to hold any investment security showing an unrealized loss until recovery, provided it remains comfortable with the credit of the issuer. As indicated above, gross unrealized gains on investment securities of \$2,246.5 million remain well in excess of gross unrealized losses of \$374.9 million as of December 31, 2016. Historically low interest rates continued to put pressure on the Company's investment yield. The Company does not rely on short-term funding or commercial paper and to date it has experienced no liquidity pressure, nor does it anticipate such pressure in the foreseeable future.

The Company projects its reserves to be sufficient and it would not expect to write down deferred acquisition costs or be required to take any actions to augment capital, even if interest rates remain at current levels for the next five years, assuming all other factors remain constant. While the Company has felt the pressures of sustained low interest rates and volatile equity markets and may continue to do so, its business operations are not overly sensitive to these risks. Although management believes the Company's current capital base is adequate to support its business at current operating levels, it continues to monitor new business opportunities and any associated new capital needs that could arise from the changing financial landscape.

The Holding Company

RGA is an insurance holding company whose primary uses of liquidity include, but are not limited to, the immediate capital needs of its operating companies, dividends paid to its shareholders, repurchase of common stock and interest payments on its indebtedness. The primary sources of RGA's liquidity include proceeds from its capital-raising efforts, interest income on undeployed corporate investments, interest income received on surplus notes with RGA Reinsurance, RCM and Rockwood Re and dividends from operating subsidiaries. As the Company continues its expansion efforts, RGA will continue to be dependent upon these sources of liquidity. See "Part IV – Item 15(a)(2) Financial Statement Schedules – Schedule II – Condensed Financial Information of Registrant" for more information regarding RGA's financial information.

RGA, through wholly-owned subsidiaries, has committed to provide statutory reserve support to third-parties, in exchange for a fee, by funding loans if certain defined events occur. Such statutory reserves are required under the U.S. Valuation of Life Policies Model Regulation (commonly referred to as Regulation XXX for term life insurance policies and Regulation A-XXX for universal life secondary guarantees). The third-parties have recourse to RGA should the subsidiary fail to provide the required funding, however, as of December 31, 2016, the Company does not believe that it will be required to provide any funding under these commitments as the occurrence of the defined events is considered remote. See Note 12 - "Commitments, Contingencies and Guarantees" in the Notes to Consolidated Financial Statements for a table that presents these commitments by period and maximum obligation.

RGA established an intercompany revolving credit facility where certain subsidiaries can lend to or borrow from each other and from RGA in order to manage capital and liquidity more efficiently. The intercompany revolving credit facility, which is a series of demand loans among RGA and its affiliates, is permitted under applicable insurance laws. This facility reduces overall borrowing costs by allowing RGA and its operating companies to access internal cash resources instead of incurring third-party transaction costs. The statutory borrowing and lending limit for RGA's Missouri-domiciled insurance subsidiaries is currently 3% of the insurance company's admitted assets as of its most recent year-end. There was \$25.0 million and \$45.0 million outstanding under the intercompany revolving credit facility as of December 31, 2016 and 2015, respectively. In addition to loans associated with the intercompany revolving credit facility, RGA and its subsidiary, RGA Capital LLC, provided loans to RGA Australian Holdings Pty Limited with a total outstanding balance of \$43.2 million and \$43.7 million as of December 31, 2016 and 2015, respectively.

The Company believes that it has sufficient liquidity for the next 12 months to fund its cash needs under various scenarios that include the potential risk of early recapture of reinsurance treaties and higher than expected death claims. Historically, the Company has generated positive net cash flows from operations. However, in the event of significant unanticipated cash requirements beyond normal liquidity, the Company has multiple liquidity alternatives available based on market conditions and the amount and timing of the liquidity need. These options include borrowings under committed credit facilities, secured borrowings, the ability to issue long-term debt, preferred securities or common equity and, if necessary, the sale of invested assets, subject to market conditions.

Undistributed earnings of the Company's foreign subsidiaries are targeted for reinvestment outside of the U.S. As of December 31, 2016, the amount of cash and cash equivalents and short-term investments held by the Company's subsidiaries that are taxed in a foreign jurisdiction was \$881.9 million, of which \$422.4 million was not available for use in the U.S. without incurring U.S. income taxes. The Company's liquidity and capital position would not be materially affected by not having these funds available for use in the U.S. due to the Company's aforementioned alternate liquidity resources. The Company would incur approximately \$107.9 million in U.S. income taxes if these cash and cash equivalents and short-term investments are repatriated to the U.S.

RGA endeavors to maintain a capital structure that provides financial and operational flexibility to its subsidiaries, credit ratings that support its competitive position in the financial services marketplace, and shareholder returns. As part of the Company's capital deployment strategy, it has in recent years repurchased shares of RGA common stock and paid dividends to RGA shareholders, as authorized by the board of directors. In January 2016, RGA's board of directors authorized a share repurchase program, with no expiration date, to repurchase up to \$400.0 million of RGA's outstanding common stock. The pace of repurchase activity depends on various factors such as the level of available cash, an evaluation of the costs and benefits associated with alternative uses of excess capital, such as acquisitions and in force reinsurance transactions, and RGA's stock price. Details underlying dividend and share repurchase program activity were as follows (in thousands, except share data):

	2016	2015	2014
Dividends to shareholders	\$ 100,371	\$ 93,381	\$ 87,256
Repurchases of treasury stock ⁽¹⁾	116,522	375,305	197,665
Total amount paid to shareholders	\$ 216,893	\$ 468,686	\$ 284,921
Number of shares repurchased ⁽¹⁾	1,356,892	4,145,440	2,530,608
Average price per share	\$ 85.87	\$ 90.53	\$ 78.11

(1) Excludes shares utilized to execute and settle certain stock incentive awards.

On January 26, 2017, RGA's board of directors authorized a share repurchase program for up to \$400.0 million of RGA's outstanding common stock. The authorization was effective immediately and does not have an expiration date. In connection with this new authorization, the board of directors terminated the stock repurchase authority granted in 2016.

RGA declared dividends totaling \$1.56 per share in 2016. All future payments of dividends are at the discretion of RGA's board of directors and will depend on the Company's earnings, capital requirements, insurance regulatory conditions, operating conditions, and other such factors as the board of directors may deem relevant. The amount of dividends that RGA can pay will depend in part on the operations of its reinsurance subsidiaries.

See Note 13 - "Debt" and Note 18 - "Equity" in the Notes to Consolidated Financial Statements for additional information regarding the Company's securities transactions.

Statutory Dividend Limitations

RCM, RGA Reinsurance and Chesterfield Re are subject to Missouri statutory provisions that restrict the payment of dividends. They may not pay dividends in any 12-month period in excess of the greater of the prior year's statutory net gain from operations or 10% of statutory capital and surplus at the preceding year-end, without regulatory approval. The applicable statutory provisions only permit an insurer to pay a shareholder dividend from unassigned surplus. Any dividends paid by RGA Reinsurance would be paid to RCM, its parent company, which in turn has restrictions related to its ability to pay dividends to RGA. Chesterfield Re would pay dividends to its immediate parent Chesterfield Financial, which would in turn pay dividends to RCM, subject to the terms of the indenture for the embedded value securitization transaction, in which Chesterfield Financial cannot declare or pay any dividends so long as any private placement notes are outstanding. The MDOI allows RCM to pay a dividend to RGA to the extent RCM received the dividend from RGA Reinsurance, without limitation related to the level of unassigned surplus. Dividend payments from other subsidiaries are subject to regulations in the jurisdiction of domicile, which are generally based on their earnings and/or capital level. In addition, the earnings of substantially all of the Company's foreign subsidiaries have been indefinitely reinvested in foreign operations.

The dividend limitations for RCM, RGA Reinsurance and Chesterfield Re are based on statutory financial results. Statutory accounting practices differ in certain respects from accounting principles used in financial statements prepared in conformity with GAAP. Significant differences include the treatment of deferred acquisition costs, deferred income taxes, required investment reserves, reserve calculation assumptions and surplus notes.

Debt

Certain of the Company's debt agreements contain financial covenant restrictions related to, among others, liens, the issuance and disposition of stock of restricted subsidiaries, minimum requirements of consolidated net worth, maximum ratios of debt to capitalization and change of control provisions. The Company is required to maintain a minimum consolidated net worth, as defined in the debt agreements, of \$3.5 billion, calculated as of the last day of each fiscal quarter. Also, consolidated indebtedness, calculated as of the last day of each fiscal quarter, cannot exceed 35% of the sum of the Company's consolidated indebtedness plus adjusted consolidated stockholders' equity. A material ongoing covenant default could require immediate payment of the amount due, including principal, under the various agreements. Additionally, the Company's debt agreements contain cross-default covenants, which would make outstanding borrowings immediately payable in the event of a material uncured covenant default under any of the agreements, including, but not limited to, non-payment of indebtedness when due for an amount in excess of \$100.0 million, bankruptcy proceedings, or any other event which results in the acceleration of the maturity of indebtedness.

As of December 31, 2016 and 2015, the Company had \$3.1 billion and \$2.3 billion, respectively, in outstanding borrowings under its debt agreements and was in compliance with all covenants under those agreements. As of December 31, 2016, the average interest rate on long-term debt outstanding was 5.16% compared to 5.20% at the end of 2015. The ability of the Company to make debt principal and interest payments depends on the earnings and surplus of subsidiaries, investment earnings on undeployed capital proceeds, available liquidity at the holding company, and the Company's ability to raise additional funds.

The Company enters into derivative agreements with counterparties that reference either the Company's debt rating or its financial strength rating. If either rating is downgraded in the future, it could trigger certain terms in the Company's derivative agreements, which could negatively affect overall liquidity. For the majority of the Company's derivative agreements, there is a termination event, at the Company's option, should the long-term senior debt ratings drop below either BBB+ (S&P) or Baa1 (Moody's) or the financial strength ratings drop below either A- (S&P) or A3 (Moody's).

In June 2016, RGA issued 3.95% Senior Notes due September 15, 2026 with a face amount of \$400.0 million and 5.75% Fixed-To-Floating Rate Subordinated Debentures due June 15, 2056 with a face amount of \$400.0 million. These securities have been registered with the Securities and Exchange Commission. The net proceeds from these offerings were approximately \$791.2 million and will be used in part to repay upon maturity the Company's \$300.0 million 5.625% senior notes that mature in March 2017. The remainder will be used for general corporate purposes. Capitalized issue costs were approximately \$8.8 million.

The Company may borrow up to \$850.0 million in cash and obtain letters of credit in multiple currencies on its revolving credit facility that expires in December 2019. As of December 31, 2016, the Company had no cash borrowings outstanding and \$96.1 million in issued, but undrawn, letters of credit under this facility.

Based on the historic cash flows and the current financial results of the Company, management believes RGA's cash flows will be sufficient to enable RGA to meet its obligations for at least the next 12 months.

Letters of Credit

The Company has obtained bank letters of credit in favor of various affiliated and unaffiliated insurance companies from which the Company assumes business. These letters of credit represent guarantees of performance under the reinsurance agreements and allow ceding companies to take statutory reserve credits. Certain of these letters of credit contain financial covenant restrictions similar to those described in the "Debt" discussion above. At December 31, 2016, there were approximately \$189.4 million of outstanding bank letters of credit in favor of third parties. Additionally, in accordance with applicable regulations, the Company utilizes letters of credit to secure statutory reserve credits when it retrocedes business to its affiliated subsidiaries. The Company cedes business to its affiliates to help reduce the amount of regulatory capital required in certain jurisdictions, such as the U.S. and the UK. The Company believes the capital required to support the business in the affiliates reflects more realistic expectations than the original jurisdiction of the business, where capital requirements are often considered to be quite conservative. As of December 31, 2016, \$1.0 billion in letters of credit from various banks were outstanding, but undrawn, backing reinsurance between the various subsidiaries of the Company. See Note 13—"Debt" in the Notes to Consolidated Financial Statements for information regarding the Company's letter of credit facilities.

In 2006, the Company entered into a reinsurance agreement that requires it to post collateral for a portion of the business being reinsured. As part of the collateral requirements, a third party financial institution has issued a letter of credit for the benefit of the ceding company (the "beneficiary"), which may draw on the letter of credit to be reimbursed for valid claim payments not made by RGA pursuant to the reinsurance treaty. RGA is not a direct obligor under the letter of credit. To the extent the letter of credit is drawn by the beneficiary, reimbursement to the third party financial institution will be through reduction in amounts owed to RGA by the third party financial institution under a secured structured loan. RGA's liability under the reinsurance agreement will be reduced by any amount drawn by the ceding company under the letter of credit. As of December 31, 2016, the structured loan totaled \$17.5 million and the amount of the letter of credit totaled \$40.7 million. The structured loan is recorded in other invested assets on RGA's consolidated balance sheets.

Collateral Finance and Securitization Notes and Statutory Reserve Funding

The Company uses various internal and third-party reinsurance arrangements and funding sources to manage statutory reserve strain, including reserves associated with the U.S. Valuation of Life Policies Model Regulation (commonly referred to as Regulation XXX), and collateral requirements. Assets in trust and letters of credit are often used as collateral in these arrangements.

Regulation XXX, implemented in the U.S. for various types of life insurance business beginning January 1, 2000, significantly increased the level of reserves that U.S. life insurance and life reinsurance companies must hold on their statutory financial statements for various types of life insurance business, primarily certain level premium term life products. The reserve levels required under Regulation XXX increase over time and are normally in excess of reserves required under GAAP. In situations where primary insurers have reinsured business to reinsurers that are unlicensed and unaccredited in the U.S., the reinsurer must provide collateral equal to its reinsurance reserves in order for the ceding company to receive statutory financial statement credit.

In order to manage the effect of Regulation XXX on its statutory financial statements, RGA Reinsurance has retroceded a majority of Regulation XXX reserves to unaffiliated and affiliated reinsurers, both licensed and unlicensed.

RGA Reinsurance's statutory capital may be significantly reduced if the unlicensed unaffiliated or affiliated reinsurer is unable to provide the required collateral to support RGA Reinsurance's statutory reserve credits and RGA Reinsurance cannot find an alternative source for collateral.

In October 2015, RGA's subsidiary, RGA Americas, entered into a collateral financing transaction pursuant to which it issued a CAD\$150.0 million note to a third party and, in return, obtained a CAD\$150.0 million demand note issued by a designated series of a Delaware master trusts. The demand note matures in October 2020 and is used to support collateral requirements for Canadian reinsurance transactions.

The demand note is secured by a portfolio of specified assets that have an aggregate market value at least equal to the principal amount of the demand note and a payment obligation pledged by a third party financial institution. The principal amount of the demand note is payable upon demand by the holder, which creates a corresponding payment under the note issued by RGA Americas. The note issued by RGA Americas bears interest at a rate equal to the rate on the corresponding demand note, plus an amount representing fees payable to the applicable third party financial institution. As of December 31, 2016, no principal payments have been received or are currently due on the demand note and, as a result, there was no payment obligation under the note issued by RGA Americas. Accordingly, the notes are not reflected in the Company's consolidated balance sheet as of that date.

In May 2015, RGA's subsidiary, RGA Barbados obtained CAD\$200.0 million of collateral financing from a third party through 2020, enabling RGA Barbados to support collateral requirements for Canadian reinsurance transactions. The obligation is reflected on the consolidated balance sheet in collateral finance and securitization notes. Interest on the collateral financing is payable quarterly and accrues at 3-month Canadian Dealer Offered Rate plus a margin and is reflected on the consolidated statements of income in collateral finance and securitization expense.

In December 2014, RGA's subsidiary, Chesterfield Financial, issued \$300.0 million of asset-backed notes due December 2034 in a private placement. The notes were issued as part of an embedded value securitization transaction covering a closed block of policies assumed by RGA Reinsurance and retroceded to Chesterfield Re under a retrocession agreement. Proceeds from the notes, along with a direct investment by the Company, were applied by Chesterfield Financial to (i) pay certain transaction-related expenses, (ii) establish a reserve account owned by Chesterfield Financial and pledged to the indenture trustee for the benefit of the holders of the notes (primarily to cover interest payments on the notes), and (iii) to fund an initial stock purchase from and capital contribution to Chesterfield Re to capitalize Chesterfield Re and to finance the payment of ceding commission by Chesterfield Re to RGA Reinsurance under the retrocession agreement. Interest on the notes accrues at an annual rate of 4.50%, payable quarterly. The notes represent senior, secured indebtedness of Chesterfield Financial. Limited support is provided by RGA for temporary potential liquidity events at Chesterfield Financial and for temporary potential statutory capital and surplus events at Chesterfield Re. Otherwise, there is no legal recourse to RGA or its other subsidiaries. The notes are not insured or guaranteed by any other person or entity.

In June 2006, RGA's subsidiary, Timberlake Financial, issued \$850.0 million of Series A Floating Rate Insured Notes, due June 2036, in a private placement. The notes were issued to fund the collateral requirements for statutory reserves required by Regulation XXX on specified term life insurance policies reinsured by RGA Reinsurance and retroceded to Timberlake Re. Proceeds from the notes, along with a \$112.8 million direct investment by the Company, were deposited into a series of accounts that collateralize the notes and are not available to satisfy the general obligations of the Company. Interest on the notes accrues at an annual rate of 1-month London Interbank Offered Rate ("LIBOR") plus a base rate margin, payable monthly.

Based on the growth of the Company's business and the pattern of reserve levels under Regulation XXX associated with term life business and other statutory reserve requirements, the amount of ceded reserve credits is expected to grow, albeit at slower rates than in the immediate past. This growth will require the Company to obtain additional letters of credit, put additional assets in trust, or utilize other funding mechanisms to support reserve credits. If the Company is unable to support the reserve credits, the regulatory capital levels of several of its subsidiaries may be significantly reduced, while the regulatory capital requirements for these subsidiaries would not change. The reduction in regulatory capital would not directly affect the Company's consolidated shareholders' equity under GAAP; however, it could affect the Company's ability to write new business and retain existing business.

Affiliated captives are commonly used in the insurance industry to help manage statutory reserve and collateral requirements and are often domiciled in the same state as the insurance company that sponsors the captive. The NAIC has analyzed the insurance industry's use of affiliated captive reinsurers to satisfy certain reserve requirements and has adopted measures to promote uniformity in both the approval and supervision of such reinsurers. New standards to address the use of captive reinsurers were implemented, allowing current captives to continue in accordance with their currently approved plans. State insurance regulators that regulate the Company's domestic insurance companies have placed additional restrictions on the use of newly established captive reinsurers which may increase costs and add complexity. As a result, the Company may need to alter the type and volume of business it reinsures, increase prices on those products, raise additional capital to support higher regulatory reserves

or implement higher cost strategies, all of which could adversely affect the Company's competitive position and its results of operations.

In the U.S., the introduction of the certified reinsurer has provided an alternative way to manage collateral requirements. In 2014, RGA Americas was designated as a certified reinsurer by the MDOI. This designation allows the Company to retrocede business to RGA Americas in lieu of using captives for collateral requirements. Effective in 2017, principles-based reserves are permitted in the U.S. During 2016, the NAIC amended the standard valuation law to adopt life principles-based reserving to be effective January 1, 2017, allowing a three-year adoption period. The Company has chosen not to establish captives subject to the new regulations as it evaluates the impact of the regulations on new captives, and how these new captives fit into the Company's overall risk management and financing programs.

Assets in Trust

Some treaties give ceding companies the right to request that the Company place assets in trust for the benefit of the cedant to support statutory reserve credits in the event of a downgrade of the Company's ratings to specified levels, generally non-investment grade levels, or if minimum levels of financial condition are not maintained. As of December 31, 2016, these treaties had approximately \$1.9 billion in statutory reserves. Assets placed in trust continue to be owned by the Company, but their use is restricted based on the terms of the trust agreement. Securities with an amortized cost of \$2.4 billion were held in trust for the benefit of certain RGA subsidiaries to satisfy collateral requirements for reinsurance business at December 31, 2016. Additionally, securities with an amortized cost of \$12.1 billion as of December 31, 2016 were held in trust to satisfy collateral requirements under certain third-party reinsurance treaties. Under certain conditions, the Company may be obligated to move reinsurance from one subsidiary of RGA to another subsidiary or make payments under a given treaty. These conditions include change in control or ratings of the subsidiary, insolvency, nonperformance under a treaty, or loss of reinsurance license of such subsidiary. If the Company was ever required to perform under these obligations, the risk to the Company on a consolidated basis under the reinsurance treaties would not change; however, additional capital may be required due to the change in jurisdiction of the subsidiary reinsuring the business, which could lead to a strain on liquidity.

Proceeds from the notes issued by Timberlake Financial and RGA's direct investment in Timberlake Financial were deposited into a series of trust accounts as collateral and are not available to satisfy the general obligations of the Company. As of December 31, 2016 the Company held deposits in trust and in custody of \$893.8 million for this purpose, which is not included in the figures above. A reserve account has been established to cover interest payments on notes issued by Chesterfield Financial that are not available to satisfy the general obligations of the Company. As of December 31, 2016 the Company held deposits in trust of \$22.1 million for this purpose, which is not included in the figures above. See "Collateral Finance and Securitization Notes and Statutory Reserve Funding" above for additional information on the Timberlake Financial and Chesterfield Financial notes.

Reinsurance Operations

Reinsurance agreements, whether facultative or automatic, generally provide recapture provisions. Most U.S.-based reinsurance treaties include a recapture right for ceding companies, generally after 10 years. Outside of the U.S., treaties primarily include a mutually agreed-upon recapture provision. Recapture rights permit the ceding company to reassume all or a portion of the risk formerly ceded to the reinsurer. In some situations, the Company has the right to place assets in trust for the benefit of the ceding party in lieu of recapture. Additionally, certain treaties may grant recapture rights to ceding companies in the event of a significant decrease in RGA Reinsurance's NAIC risk based capital ratio or financial strength rating. The RBC ratio trigger varies by treaty, with the majority between 125% and 225% of the NAIC's company action level. Financial strength rating triggers vary by treaty with the majority of the triggers reached if RGA Reinsurance's financial strength rating falls five notches from its current rating of "AA-" to the "BBB" level on the S&P scale. Recapture of business previously ceded does not affect premiums ceded prior to the recapture of such business, but would reduce premiums in subsequent periods. Upon recapture, the Company would reflect a net gain or loss on the settlement of the assets and liabilities associated with the treaty. In some cases, the ceding company is required to pay the Company a recapture fee. The Company estimates approximately \$345.2 billion of its gross assumed in force business, as of December 31, 2016, was subject to treaties where the ceding company could recapture in the event minimum levels of financial condition or ratings were not maintained.

Guarantees

RGA has issued guarantees to third parties on behalf of its subsidiaries for the payment of amounts due under certain reinsurance treaties, securities borrowing arrangements, financing arrangements and office lease obligations, whereby if a subsidiary fails to meet an obligation, RGA or one of its other subsidiaries will make a payment to fulfill the obligation. In limited circumstances, treaty guarantees are granted to ceding companies in order to provide additional security, particularly in cases where RGA's subsidiary is relatively new, unrated, or not of significant size, relative to the ceding company. Potential guaranteed amounts of future payments will vary depending on production levels and underwriting results. Guarantees related to borrowed securities provide additional security to third parties should a subsidiary fail to return the borrowed securities when due. RGA

has issued payment guarantees on behalf of two of its subsidiaries in the event the subsidiaries fail to make payment under their office lease obligations. See Note 12 - “Commitments, Contingencies and Guarantees” in the Notes to Consolidated Financial Statements for a table that presents the amounts for guarantees, by type, issued by the Company.

In addition, the Company indemnifies its directors and officers pursuant to its charters and by-laws. Since this indemnity generally is not subject to limitation with respect to duration or amount, the Company does not believe that it is possible to determine the maximum potential amount due under this indemnity in the future.

Off-Balance Sheet Arrangements

The Company has commitments to fund investments in limited partnerships, commercial mortgage loans, private placement investments and bank loans, including revolving credit agreements. See Note 12 - “Commitments, Contingencies and Guarantees” in the Notes to Consolidated Financial Statements for additional information on the Company’s commitments to fund investments and other off-balance sheet arrangements.

The Company has not engaged in trading activities involving non-exchange-traded contracts reported at fair value, nor has it engaged in relationships or transactions with persons or entities that derive benefits from their non-independent relationship with the Company.

Cash Flows

The Company’s principal cash inflows from its reinsurance operations include premiums and deposit funds received from ceding companies. The primary liquidity concerns with respect to these cash flows are early recapture of the reinsurance contract by the ceding company and lapses of annuity products reinsured by the Company. The Company’s principal cash inflows from its invested assets result from investment income and the maturity and sales of invested assets. The primary liquidity concern with respect to these cash inflows relates to the risk of default by debtors and interest rate volatility. The Company manages these risks very closely. See “Investments” and “Interest Rate Risk” below.

Additional sources of liquidity to meet unexpected cash outflows in excess of operating cash inflows and current cash and equivalents on hand include selling short-term investments or fixed maturity securities and drawing funds under a revolving credit facility, under which the Company had availability of \$753.9 million as of December 31, 2016. The Company also has \$1.0 billion of funds available through collateralized borrowings from the Federal Home Loan Bank of Des Moines (“FHLB”) as of December 31, 2016. As of December 31, 2016, the Company could have borrowed these additional amounts without violating any of its existing debt covenants.

The Company’s principal cash outflows relate to the payment of claims liabilities, interest credited, operating expenses, income taxes, dividends to shareholders, purchases of treasury stock, and principal and interest under debt and other financing obligations. The Company seeks to limit its exposure to loss on any single insured and to recover a portion of benefits paid by ceding reinsurance to other insurance enterprises or reinsurers under excess coverage and coinsurance contracts (See Note 2, “Summary of Significant Accounting Policies” of the Notes to Consolidated Financial Statements). The Company performs annual financial reviews of its retrocessionaires to evaluate financial stability and performance. The Company has never experienced a material default in connection with retrocession arrangements, nor has it experienced any difficulty in collecting claims recoverable from retrocessionaires; however, no assurance can be given as to the future performance of such retrocessionaires nor to the recoverability of future claims. The Company’s management believes its current sources of liquidity are adequate to meet its cash requirements for the next 12 months.

Summary of Primary Sources and Uses of Liquidity and Capital

The Company's primary sources and uses of liquidity and capital are summarized as follows (dollars in thousands):

	For the years ended December 31,		
	2016	2015	2014
Sources:			
Net cash provided by operating activities	\$ 1,421,076	\$ 2,088,615	\$ 2,336,155
Proceeds from long-term debt issuance	799,984	—	100,000
Proceeds from issuance of collateral finance and securitization notes	—	164,220	300,000
Excess tax benefits from share-based payment arrangement	162	2,963	—
Exercise of stock options, net	15,321	11,151	9,246
Change in cash collateral for derivatives and other arrangements	26,413	52,381	162,435
Cash provided by changes in universal life and other investment type policies and contracts	512,612	—	—
Total sources	2,775,568	2,319,330	2,907,836
Uses:			
Net cash used in investing activities	2,781,084	1,431,741	1,310,945
Dividends to stockholders	100,371	93,381	87,256
Repayment of collateral finance and securitization notes	64,571	19,732	—
Debt issuance costs	8,766	4,748	4,260
Principal payments of long-term debt	2,479	2,380	772
Purchases of treasury stock	122,916	384,519	201,525
Excess tax benefits from share-based payment arrangement	—	—	3,011
Cash used for changes in universal life and other investment type policies and contracts	—	434,237	530,416
Effect of exchange rate changes on cash	19,938	68,986	47,629
Total uses	3,100,125	2,439,724	2,185,814
Net increase (decrease) in cash and cash equivalents	\$ (324,557)	\$ (120,394)	\$ 722,022

Cash Flows from Operations - The principal cash inflows from the Company's reinsurance activities come from premiums, investment and fee income, annuity considerations and deposit funds. The principal cash outflows relate to the liabilities associated with various life and health insurance, annuity and disability products, operating expenses, income tax and interest on outstanding debt obligations. The primary liquidity concern with respect to these cash flows is the risk of shortfalls in premiums and investment income, particularly in periods with abnormally high claims levels.

Cash Flows from Investments - The principal cash inflows from the Company's investment activities come from repayments of principal on invested assets, proceeds from sales and maturities of invested assets, and settlements of freestanding derivatives. The principal cash outflows relate to purchases of investments, issuances of policy loans and settlements of freestanding derivatives. The Company typically has a net cash outflow from investing activities because cash inflows from insurance operations are reinvested in accordance with its asset/liability management discipline to fund insurance liabilities. The Company closely monitors and manages these risks through its credit risk management process. The primary liquidity concerns with respect to these cash flows are the risk of default by debtors and market disruption.

Financing Cash Flows - The principal cash inflows from the Company's financing activities come from issuances of RGA debt and equity securities, and deposit funds associated with universal life and other investment type policies and contracts. The principal cash outflows come from repayments of debt, payments of dividends to stockholders, purchases of treasury stock, and withdrawals associated with universal life and other investment type policies and contracts. A primary liquidity concern with respect to these cash flows is the risk of early contractholder and policyholder withdrawal.

Contractual Obligations

The following table displays the Company's contractual obligations, including obligations arising from its reinsurance business (in millions):

	Payment Due by Period				
	Total	Less than 1 Year	1-3 Years	4-5 Years	After 5 Years
Future policy benefits ⁽¹⁾	\$ 6,627.5	\$ (413.1)	\$ (748.9)	\$ (717.8)	\$ 8,507.3
Interest-sensitive contract liabilities ⁽²⁾	20,005.0	1,563.2	3,318.7	2,922.7	12,200.4
Long-term debt, including interest	6,245.6	464.7	712.4	660.7	4,407.8
Collateral finance and securitization notes, including interest ⁽³⁾	916.7	95.9	221.8	376.7	222.3
Other policy claims and benefits	4,263.0	4,263.0	—	—	—
Operating leases	45.7	11.3	16.6	6.8	11.0
Limited partnerships	332.2	332.2	—	—	—
Payables for collateral received under derivative transactions	254.5	254.5	—	—	—
Other investment related commitments	349.5	349.5	—	—	—
Total	\$ 39,039.7	\$ 6,921.2	\$ 3,520.6	\$ 3,249.1	\$ 25,348.8

- (1) Future policyholder benefits include liabilities related primarily to the Company's reinsurance of life and health insurance products. Amounts presented in the table above represent the estimated obligations as they become due to ceding companies for benefits under such contracts, and also include future premiums, allowances and other amounts due to or from the ceding companies as the result of the Company's assumptions of mortality, morbidity, policy lapse and surrender risk as appropriate to the respective product. Total payments may vary materially from prior years due to the assumption of new treaties or as a result of changes in projections of future experience. All estimated cash payments presented in the table above are undiscounted as to interest, net of estimated future premiums on policies currently in force and gross of any reinsurance recoverable. The sum of the undiscounted estimated cash flows shown for all years in the table is an obligation of \$6,627.5 million compared to the discounted liability amount of \$19,581.6 million included on the consolidated balance sheets, substantially all due to the effects of discounting the estimated cash flows in the balance sheet liability. The time value of money is not factored into the calculations in the table above. In addition, differences will arise due to changes in the projection of future benefit payments compared with those developed when the reserve was established. Expected premiums can exceed expected policy benefit payments and allowances due to the nature of the reinsurance treaties, which generally have increasing premium rates that exceed the increasing benefit payments.
- (2) Interest-sensitive contract liabilities include amounts related to the Company's reinsurance of asset-intensive products, primarily deferred annuities and corporate-owned life insurance. Amounts presented in the table above represent the estimated obligations as they become due both to and from ceding companies relating to activity of the underlying policyholders. Amounts presented in the table above represent the estimated obligations under such contracts undiscounted as to interest, including assumptions related to surrenders, withdrawals, premium persistency, partial withdrawals, surrender charges, annuitizations, mortality, future interest credited rates and policy loan utilization. The sum of the obligations shown for all years in the table of \$20,005.0 million exceeds the liability amount of \$14,029.4 million included on the consolidated balance sheets principally due to the lack of discounting and accounting for separate account contracts.
- (3) Includes the Manor Re collateral financing arrangement that does not appear on the consolidated balance sheets due to a master netting agreement where the Company holds a term deposit note of equal value from the counterparty.

Excluded from the table above are net deferred income tax liabilities, unrecognized tax benefits, and accrued interest related to unrecognized tax benefits of \$2,918.6 million, for which the Company cannot reliably determine the timing of payment. Current income tax payable is also excluded from the table.

The net funded status of the Company's qualified and nonqualified pension and other postretirement liabilities included within other liabilities has been excluded from the amounts presented in the table above. As of December 31, 2016, the Company had a net unfunded balance of \$137.7 million related to qualified and nonqualified pension and other postretirement liabilities. See Note 10 – "Employee Benefit Plans" in the Notes to Consolidated Financial Statements for information related to the Company's obligations and funding requirements for pension and other post-employment benefits.

Asset / Liability Management

The Company actively manages its cash and invested assets using an approach that is intended to balance quality, diversification, asset/liability matching, liquidity and investment return. The goals of the investment process are to optimize after-tax, risk-adjusted investment income and after-tax, risk-adjusted total return while managing the assets and liabilities on a cash flow and duration basis.

The Company has established target asset portfolios for each major insurance product, which represent the investment strategies intended to profitably fund its liabilities within acceptable risk parameters. These strategies include objectives and limits for effective duration, yield curve sensitivity and convexity, liquidity, asset sector concentration and credit quality.

The Company's asset-intensive products are primarily supported by investments in fixed maturity securities reflected on the Company's consolidated balance sheets and under funds withheld arrangements with the ceding company. Investment guidelines are established to structure the investment portfolio based upon the type, duration and behavior of products in the liability portfolio so as to achieve targeted levels of profitability. The Company manages the asset-intensive business to provide a targeted spread between the interest rate earned on investments and the interest rate credited to the underlying interest-sensitive contract liabilities. The Company periodically reviews models projecting different interest rate scenarios and their effect on profitability. Certain of

these asset-intensive agreements, primarily in the U.S. and Latin America Financial Solutions operating segment, are generally funded by fixed maturity securities that are withheld by the ceding company.

The Company's liquidity position (cash and cash equivalents and short-term investments) was \$1,277.4 million and \$2,083.6 million at December 31, 2016 and 2015, respectively. The decrease in cash and cash equivalents in 2016 is primarily related to the timing and execution of the Company's investment strategies. Cash and cash equivalents includes cash collateral received from derivative counterparties of \$254.5 million and \$245.0 million as of December 31, 2016 and 2015, respectively. This unrestricted cash collateral is included in cash and cash equivalents and the obligation to return it is included in other liabilities in the Company's consolidated balance sheets. Liquidity needs are determined from valuation analyses conducted by operational units and are driven by product portfolios. Periodic evaluations of demand liabilities and short-term liquid assets are designed to adjust specific portfolios, as well as their durations and maturities, in response to anticipated liquidity needs.

See "Securities Borrowing, Lending and Other" in Note 4 - "Investments" in the Notes to Consolidated Financial Statements for information related to the Company's securities borrowing, lending and repurchase/reverse repurchase programs. In addition to its security agreements with third parties, certain RGA's subsidiaries have entered into intercompany securities lending agreements to more efficiently source securities for lending to third parties and to provide for more efficient regulatory capital management.

The Company is a member of the FHLB and holds \$55.7 million of FHLB common stock, which is included in other invested assets on the Company's consolidated balance sheets. Membership provides the Company access to borrowing arrangements with the FHLB ("advances") and funding agreements, discussed below. The Company did not have advances at December 31, 2016 and 2015. The Company's average outstanding balance of advances was \$28.5 million and \$14.9 million in 2016 and 2015, respectively. Interest on advances is reflected in interest expense on the Company's consolidated statements of income.

In addition, the Company has also entered into funding agreements with the FHLB under guaranteed investment contracts whereby the Company has issued the funding agreements in exchange for cash and for which the FHLB has been granted a blanket lien on the Company's commercial and residential mortgage-backed securities and commercial mortgage loans used to collateralize the Company's obligations under the funding agreements. The Company maintains control over these pledged assets, and may use, commingle, encumber or dispose of any portion of the collateral as long as there is no event of default and the remaining qualified collateral is sufficient to satisfy the collateral maintenance level. The funding agreements and the related security agreements represented by this blanket lien provide that upon any event of default by the Company, the FHLB's recovery is limited to the amount of the Company's liability under the outstanding funding agreements. The amount of the Company's liability for the funding agreements with the FHLB under guaranteed investment contracts was \$1.1 billion and \$622.1 million at December 31, 2016 and 2015, respectively, which is included in interest sensitive contract liabilities on the Company's consolidated balance sheets. The advances on these agreements are collateralized primarily by commercial and residential mortgage-backed securities, commercial mortgage loans, and U.S. Treasury and government agency securities. The amount of collateral exceeds the liability and is dependent on the type of assets collateralizing the guaranteed investment contracts.

Investments

Management of Investments

The Company's investment and derivative strategies involve matching the characteristics of its reinsurance products and other obligations and to seek to closely approximate the interest rate sensitivity of the assets with estimated interest rate sensitivity of the reinsurance liabilities. The Company achieves its income objectives through strategic and tactical asset allocations, security and derivative strategies within an asset/liability management and disciplined risk management framework. Derivative strategies are employed within the Company's risk management framework to help manage duration, currency, and other risks in assets and/or liabilities and to replicate the credit characteristics of certain assets. For a discussion of the Company's risk management process see "Market Risk" in the "Enterprise Risk Management" section below.

The Company's portfolio management groups work with the Enterprise Risk Management function to develop the investment policies for the assets of the Company's domestic and international investment portfolios. All investments held by the Company, directly or in a funds withheld at interest reinsurance arrangement, are monitored for conformance with the Company's stated investment policy limits as well as any limits prescribed by the applicable jurisdiction's insurance laws and regulations. See Note 4 - "Investments" in the Notes to Consolidated Financial Statements for additional information regarding the Company's investments.

Portfolio Composition

The Company had total cash and invested assets of \$46.0 billion and \$43.5 billion at December 31, 2016 and 2015, respectively, as illustrated below (dollars in thousands):

	2016	% of Total	2015	% of Total
Fixed maturity securities, available-for-sale	\$ 32,093,625	69.6%	\$ 29,642,905	68.1%
Mortgage loans on real estate	3,775,522	8.2	3,129,951	7.2
Policy loans	1,427,602	3.1	1,468,796	3.4
Funds withheld at interest	5,875,919	12.8	5,880,203	13.5
Short-term investments	76,710	0.2	558,284	1.3
Other invested assets	1,591,940	3.5	1,298,120	3.0
Cash and cash equivalents	1,200,718	2.6	1,525,275	3.5
Total cash and invested assets	\$ 46,042,036	100.0%	\$ 43,503,534	100.0%

Investment Yield

The following table presents consolidated average invested assets at amortized cost, net investment income and investment yield, excluding spread related business. Spread related business is primarily associated with contracts on which the Company earns an interest rate spread between assets and liabilities. To varying degrees, fluctuations in the yield on other spread related business is generally subject to corresponding adjustments to the interest credited on the liabilities (dollars in thousands).

				Increase /(Decrease)	
	2016	2015	2014	2016	2015
Average invested assets at amortized cost	\$ 23,188,717	\$ 20,784,941	\$ 19,876,715	11.6%	4.6%
Net investment income	1,060,641	1,002,197	957,882	5.8%	4.6%
Investment yield (ratio of net investment income to average invested assets)	4.57%	4.82%	4.82%	(25) bps	— bps

Investment yield was lower between 2016 and 2015 primarily due to the effect of a lower interest rate environment notably in the U.S. and Canada. Investment yield was consistent between 2015 and 2014 as the effect of a lower interest rate environment was offset by the cumulative effect of income related to a funds withheld transaction executed in the fourth quarter of 2015, retroactive to the beginning of the year.

Fixed Maturity and Equity Securities Available-for-Sale

See “Fixed Maturity and Equity Securities Available-for-Sale” in Note 4 – “Investments” in the Notes to Consolidated Financial Statements for tables that provide the amortized cost, unrealized gains and losses, estimated fair value of fixed maturity and equity securities, and the other-than-temporary impairments in AOCI by sector as of December 31, 2016 and 2015.

The Company’s fixed maturity securities are invested primarily in corporate bonds, mortgage-and asset-backed securities, and U.S. and foreign government securities. As of December 31, 2016 and 2015, approximately 95.0% and 94.6%, respectively, of the Company’s consolidated investment portfolio of fixed maturity securities were investment grade.

Important factors in the selection of investments include diversification, quality, yield, call protection and total rate of return potential. The relative importance of these factors is determined by market conditions and the underlying reinsurance liability and existing portfolio characteristics. The largest asset class in which fixed maturity securities were invested was in corporate securities, which represented approximately 61.1% of total fixed maturity securities at December 31, 2016, compared to 59.7% at December 31, 2015. See “Corporate Fixed Maturity Securities” in Note 4 – “Investments” in the Notes to Consolidated Financial Statements for tables showing the major industry types which comprise the corporate fixed maturity holdings at December 31, 2016 and 2015.

As of December 31, 2016, the Company’s investments in Canadian and Canadian provincial government securities represented 11.4% of the fair value of total fixed maturity securities compared to 12.1% of the fair value of total fixed maturity securities at December 31, 2015. These assets are primarily high-quality long duration provincial strips, the valuation of which is closely linked to the interest rate curve. These assets are longer in duration and held primarily for asset/liability management to meet Canadian regulatory requirements. See “Fixed Maturity and Equity Securities Available-for-Sale” in Note 4 – “Investments” in the Notes to Consolidated Financial Statements for tables showing the various sectors as of December 31, 2016 and 2015.

The Company owns floating rate securities that represent approximately 12.9% and 12.4% of the total fixed maturity securities at December 31, 2016 and December 31, 2015. These investments have a higher degree of income variability than the other fixed income holdings in the portfolio due to the floating rate nature of the interest payments. The Company holds these

investments to match specific floating rate liabilities primarily reflected in the consolidated balance sheets as collateral finance notes, as well as to enhance asset management strategies.

The Company references rating agency designations in some of its investments disclosures. These designations are based on the ratings from nationally recognized statistical rating organizations, primarily those assigned by S&P. In instances where an S&P rating is not available the Company references the rating provided by Moody's and in the absence of both the Company will generally assign equivalent ratings based on information from the National Association of Insurance Commissioners ("NAIC"). The NAIC assigns securities quality ratings and uniform valuations called "NAIC Designations" which are used by insurers when preparing their U.S. statutory filings. Structured securities (mortgage-backed and asset-backed securities) held by the Company's insurance subsidiaries that maintain the NAIC statutory basis of accounting utilize the NAIC rating methodology. The NAIC assigns designations to publicly traded as well as privately placed securities. The designations assigned by the NAIC range from class 1 to class 6, with designations in classes 1 and 2 generally considered investment grade (BBB or higher rating agency designation). NAIC designations in classes 3 through 6 are generally considered below investment grade (BB or lower rating agency designation).

The quality of the Company's available-for-sale fixed maturity securities portfolio, as measured at fair value and by the percentage of fixed maturity securities invested in various ratings categories, relative to the entire available-for-sale fixed maturity security portfolio, at December 31, 2016 and 2015 was as follows (dollars in thousands):

NAIC Designation	Rating Agency Designation	2016			2015		
		Amortized Cost	Estimated Fair Value	% of Total	Amortized Cost	Estimated Fair Value	% of Total
1	AAA/AA/A	\$ 19,813,653	\$ 21,369,081	66.5%	\$ 17,801,017	\$ 19,231,535	64.8%
2	BBB	8,834,469	9,162,483	28.5	8,838,444	8,830,172	29.8
3	BB	944,839	955,735	3.0	1,054,449	1,001,614	3.4
4	B	414,087	411,138	1.3	399,417	359,591	1.2
5	CCC	187,744	177,481	0.6	207,351	197,498	0.7
6	In or near default	16,995	17,707	0.1	22,299	22,495	0.1
	Total	\$ 30,211,787	\$ 32,093,625	100.0%	\$ 28,322,977	\$ 29,642,905	100.0%

The Company's fixed maturity portfolio includes structured securities. The following table shows the types of structured securities the Company held at December 31, 2016 and 2015 (dollars in thousands):

	2016		2015	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Residential mortgage-backed securities:				
Agency	\$ 579,686	\$ 602,549	\$ 602,524	\$ 634,077
Non-agency	678,353	676,027	675,474	677,400
Total residential mortgage-backed securities	1,258,039	1,278,576	1,277,998	1,311,477
Commercial mortgage-backed securities	1,342,440	1,363,654	1,456,848	1,483,087
Asset-backed securities	1,443,822	1,429,344	1,219,000	1,212,676
Total	\$ 4,044,301	\$ 4,071,574	\$ 3,953,846	\$ 4,007,240

The residential mortgage-backed securities include agency-issued pass-through securities and collateralized mortgage obligations. A majority of the agency-issued pass-through securities are guaranteed or otherwise supported by the Federal Home Loan Mortgage Corporation, Federal National Mortgage Association, or the Government National Mortgage Association. The principal risks inherent in holding mortgage-backed securities are prepayment and extension risks, which will affect the timing of when cash will be received and are dependent on the level of mortgage interest rates. Prepayment risk is the unexpected increase in principal payments from the expected, primarily as a result of owner refinancing. Extension risk relates to the unexpected slowdown in principal payments from the expected. In addition, non-agency mortgage-backed securities face credit risk should the borrower be unable to pay the contractual interest or principal on their obligation. The Company monitors its mortgage-backed securities to mitigate exposure to the cash flow uncertainties associated with these risks.

Asset-backed securities include credit card receivables, railcar leasing, student loans, home equity loans and collateralized debt obligations (primarily collateralized loan obligations). The principal risks specific to holding asset-backed securities are structural, credit and capital market risks. Structural risks include the securities' cash flow priority in the capital structure and the inherent prepayment sensitivity of the underlying collateral. Credit risks include the adequacy and ability to realize proceeds from the collateral. Credit risks are mitigated by credit enhancements which include excess spread, over-collateralization and subordination. Capital market risks include general level of interest rates and the liquidity for these securities in the marketplace.

The Company monitors its fixed maturity and equity securities to determine impairments in value and evaluates factors such as financial condition of the issuer, payment performance, the length of time and the extent to which the market value has been below amortized cost, compliance with covenants, general market and industry sector conditions, current intent and ability to hold securities, and various other subjective factors. Based on management's judgment, securities determined to have an other-than-temporary impairment in value are written down to fair value. See "Investments – Other-than-Temporary Impairment" in Note 2 – "Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements for additional information. The table below summarizes other-than-temporary impairments and changes in the mortgage loan provision for 2016, 2015 and 2014 (dollars in thousands):

	2016	2015	2014
Impairment losses on fixed maturity securities	\$ 38,731	\$ 57,380	\$ 7,766
Other impairment losses	10,134	6,611	6,219
Change in mortgage loan provision	872	342	(904)
Total	<u>\$ 49,737</u>	<u>\$ 64,333</u>	<u>\$ 13,081</u>

The fixed maturity impairments in 2016, 2015 and 2014 were largely related to high-yield energy and emerging market corporate securities. In addition, other impairment losses in 2016, 2015 and 2014 are primarily due to impairments on limited partnerships. There were no impairment losses on equity securities in 2016, 2015 and 2014.

At December 31, 2016 and 2015, the Company had \$374.9 million and \$627.5 million, respectively, of gross unrealized losses related to its fixed maturity and equity securities. The distribution of the gross unrealized losses related to these securities is shown below:

	2016	2015
Sector:		
Corporate securities	61.6%	75.8%
Canadian and Canada provincial governments	0.9	0.4
Residential mortgage-backed securities	3.6	1.9
Asset-backed securities	6.4	2.9
Commercial mortgage-backed securities	2.1	1.8
U.S. government and agencies	16.8	9.2
State and political subdivisions	3.3	1.4
Other foreign government, supranational and foreign government-sponsored enterprises	5.3	6.6
Total	<u>100.0%</u>	<u>100.0%</u>
Industry:		
Finance	20.1%	8.8%
Asset-backed	6.4	2.9
Industrial	32.9	62.1
Mortgage-backed	5.7	3.7
Government	26.3	17.6
Utility	8.6	4.9
Total	<u>100.0%</u>	<u>100.0%</u>

See "Unrealized Losses for Fixed Maturity and Equity Securities Available-for-Sale" in Note 4 – "Investments" in the Notes to Consolidated Financial Statements for a table that presents the total gross unrealized losses for fixed maturity securities and equity securities at December 31, 2016 and 2015, respectively, where the estimated fair value had declined and remained below amortized cost by less than 20% or more than 20%.

The Company's determination of whether a decline in value is other-than-temporary includes analysis of the underlying credit and the extent and duration of a decline in value. The Company's credit analysis of an investment includes determining whether the issuer is current on its contractual payments, evaluating whether it is probable that the Company will be able to collect all amounts due according to the contractual terms of the security and analyzing the overall ability of the Company to recover the amortized cost of the investment. In the Company's impairment review process, the duration and severity of an unrealized loss position for equity securities are given greater weight and consideration given the lack of contractual cash flows and the deferability features of these securities.

See "Purchased Credit Impaired Fixed Maturity Securities Available-for-Sale" in Note 4 – "Investments" in the Notes to Consolidated Financial Statements for tables that present information related to the Company's purchases of credit impaired securities in 2016 and 2015.

See "Unrealized Losses for Fixed Maturity and Equity Securities Available-for-Sale" in Note 4 – "Investments" in the Notes to Consolidated Financial Statements for tables that present the estimated fair values and gross unrealized losses, including other-than-temporary impairment losses reported in AOCI, for fixed maturity and equity securities that have estimated fair values

below amortized cost, by class and grade security, as well as the length of time the related market value has remained below amortized cost as of December 31, 2016 and 2015.

As of December 31, 2016 and 2015, respectively, the Company classified approximately 6.9% and 8.2% of its fixed maturity securities in the Level 3 category (refer to Note 6 – “Fair Value of Assets and Liabilities” in the Notes to Consolidated Financial Statements for additional information). These securities primarily consist of private placement corporate securities, bank loans, Canadian provincial strips, below investment grade mortgage-backed securities and subprime asset-backed securities with inactive trading markets.

See “Securities Borrowing, Lending and Other” in Note 4 – “Investments” in the Notes to Consolidated Financial Statements for information related to the Company’s securities borrowing, lending, repurchase and repurchase/reverse repurchase programs.

Mortgage Loans on Real Estate

Mortgage loans represented approximately 8.2% and 7.2% of the Company’s cash and invested assets as of December 31, 2016 and 2015, respectively. The Company’s mortgage loan portfolio consists of U.S. and Canada based investments primarily in commercial offices, light industrial properties and retail locations. The mortgage loan portfolio is diversified by geographic region and property type. Most of the mortgage loans in the Company’s portfolio range in size up to \$30.0 million, with the average mortgage loan investment as of December 31, 2016 totaling approximately \$9.1 million. The mortgage loan portfolio was diversified by geographic region and property type as discussed further under “Mortgage Loans on Real Estate” in Note 4 - “Investments” in the Notes to Consolidated Financial Statements.

As of December 31, 2016 and 2015, the Company’s mortgage loans, gross of valuation allowances, were distributed geographically as follows (dollars in thousands):

	2016		2015	
	Recorded Investment	% of Total	Recorded Investment	% of Total
Pacific	\$ 1,112,636	29.4%	\$ 894,411	28.5%
South Atlantic	782,509	20.7	663,528	21.2
Mountain	615,915	16.3	486,699	15.5
East North Central	422,512	11.2	337,002	10.7
West North Central	318,212	8.4	274,760	8.8
West South Central	317,194	8.4	237,549	7.6
Middle Atlantic	92,683	2.4	151,084	4.8
East South Central	57,216	1.5	59,630	1.9
New England	9,346	0.2	32,101	1.0
Subtotal - U.S.	3,728,223	98.5	3,136,764	100.0
Canada	54,984	1.5	—	—
Total	\$ 3,783,207	100.0%	\$ 3,136,764	100.0%

Valuation allowances on mortgage loans are established based upon inherent losses expected by management to be realized in connection with future dispositions or settlement of mortgage loans, including foreclosures. The valuation allowances are established after management considers, among other things, the value of underlying collateral and payment capabilities of debtors. Any subsequent adjustments to the valuation allowances will be treated as investment gains or losses.

See “Mortgage Loans on Real Estate” in Note 4 - “Investments” in the Notes to Consolidated Financial Statements for information regarding valuation allowances and impairments.

Policy Loans

Policy loans comprised approximately 3.1% and 3.4% of the Company’s cash and invested assets as of December 31, 2016 and 2015, respectively, substantially all of which are associated with one client. These policy loans present no credit risk because the amount of the loan cannot exceed the obligation due the ceding company upon the death of the insured or surrender of the underlying policy. The provisions of the treaties in force and the underlying policies determine the policy loan interest rates. The Company earns a spread between the interest rate earned on policy loans and the interest rate credited to corresponding liabilities.

Funds Withheld at Interest

Funds withheld at interest comprised approximately 12.8% and 13.5% of the Company’s cash and invested assets as of December 31, 2016 and 2015, respectively. For reinsurance agreements written on a modified coinsurance basis and certain

agreements written on a coinsurance basis, assets equal to the net statutory reserves are withheld and legally owned and managed by the ceding company, and are reflected as funds withheld at interest on the Company's consolidated balance sheets. In the event of a ceding company's insolvency, the Company would need to assert a claim on the assets supporting its reserve liabilities. However, the risk of loss to the Company is mitigated by its ability to offset amounts it owes the ceding company for claims or allowances with amounts owed by the ceding company. Ceding companies with funds withheld at interest had an average financial strength rating of "A" at December 31, 2016 and 2015. Certain ceding companies maintain segregated portfolios for the benefit of the Company.

The majority of the Company's funds withheld at interest balances are associated with its reinsurance of annuity contracts. The funds withheld receivable balance for segregated portfolios is subject to the general accounting principles for *Derivatives and Hedging* related to embedded derivatives for both periods.

Under these principles, the Company's funds withheld receivable under certain reinsurance arrangements incorporate credit risk exposures that are unrelated or only partially related to the creditworthiness of the obligor and include an embedded derivative feature that is not clearly and closely related to the host contract. Therefore, the embedded derivative feature must be measured at fair value on the consolidated balance sheets and changes in fair value reported in income. See "Embedded Derivatives" in Note 2 - "Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements for further discussion.

Based on data provided by ceding companies at December 31, 2016 and 2015, funds withheld at interest totaled (dollars in thousands):

Underlying Security Type:	2016		2015	
	Book Value	Estimated Fair Value	Book Value	Estimated Fair Value
Segregated portfolios	\$ 4,023,190	\$ 4,322,975	\$ 4,132,667	\$ 4,488,067
Non-segregated portfolios	1,870,191	1,870,191	1,823,713	1,823,713
Embedded derivatives ⁽¹⁾	(17,462)	—	(76,177)	—
Total funds withheld at interest	\$ 5,875,919	\$ 6,193,166	\$ 5,880,203	\$ 6,311,780

(1) Represents the fair value of embedded derivatives related to reinsurance written on a modco or funds withheld basis and subject to the general accounting principles for Derivatives and Hedging related to embedded derivatives for the segregated portfolios. When the segregated portfolios are presented on a fair value basis in the "Estimated Fair Value" column, the calculation of a separate embedded derivative is not applicable.

Based on data provided by the ceding company at December 31, 2016 and 2015, segregated portfolios contained primarily corporate, municipal, government and asset-backed securities as well as derivative securities and reverse repurchase obligations. These assets pose risks similar to the fixed maturity securities the Company directly owns. Derivatives consist primarily of S&P 500 options which are used to hedge liabilities and interest credited for EIAs reinsured by the Company. The securities held within the segregated portfolios are primarily investment-grade, with an average rating of "A." The average maturity for investments held within the segregated portfolios of funds withheld at interest is ten years or more. Interest accrues to the total funds withheld at interest assets at rates defined by the treaty terms and the Company estimated the yields were approximately 5.89%, 6.10% and 7.59% for the years ended December 31, 2016, 2015 and 2014, respectively. Changes in these estimated yields are affected by changes in the fair value of equity options held in the funds withheld portfolio associated with EIAs. Additionally, under certain treaties the Company is subject to the investment performance on the withheld assets, although it does not directly control them. To mitigate this risk, the Company helps set the investment guidelines followed by the ceding company and monitors compliance.

Other Invested Assets

Other invested assets include equity securities, limited partnership interests, joint ventures (other than operating joint ventures), structured loans, derivative contracts, fair value option ("FVO") contractholder-directed unit-linked investments, FHLB common stock and equity release mortgages. Other invested assets represented approximately 3.5% and 3.0% of the Company's cash and invested assets as of December 31, 2016 and 2015, respectively. See "Other Invested Assets" in Note 4 - "Investments" in the Notes to Consolidated Financial Statements for a table that presents the carrying value of the Company's other invested assets by type as of December 31, 2016 and 2015.

The Company utilizes derivative financial instruments to protect the Company against possible changes in the fair value of its investment portfolio as a result of interest rate changes, to hedge against risk of changes in the purchase price of securities, to hedge liabilities associated with the reinsurance of variable annuities with guaranteed living benefits and to manage the portfolio's effective yield, maturity and duration. In addition, the Company utilizes derivative financial instruments to reduce the risk associated with fluctuations in foreign currency exchange rates. The Company uses both exchange-traded and customized over-the-counter derivative financial instruments.

See Note 5 - "Derivative Instruments" in the Notes to Consolidated Financial Statements for a table that presents the notional amounts and fair value of investment related derivative instruments held at December 31, 2016 and 2015.

The Company may be exposed to credit-related losses in the event of non-performance by counterparties to derivative financial instruments. Generally, the credit exposure of the Company's derivative contracts is limited to the fair value at the reporting date plus or minus any collateral posted or held by the Company. The Company had no credit exposure related to its derivative contracts, excluding futures and mortality swaps, at December 31, 2016, as the net amount of collateral pledged to the Company from counterparties exceeded the fair value of the derivative contracts. The Company had credit exposure related to its derivative contracts, excluding futures and mortality swaps of \$7.8 million at December 31, 2015.

The Company manages its credit risk related to over-the-counter derivatives by entering into transactions with creditworthy counterparties, maintaining collateral arrangements and through the use of master agreements that provide for a single net payment to be made by one counterparty to another at each due date and upon termination. As exchange-traded futures are affected through regulated exchanges, and positions are marked to market on a daily basis, the Company has minimal exposure to credit-related losses in the event of nonperformance by counterparties. See Note 5 – "Derivative Instruments" in the Notes to Consolidated Financial Statements for more information regarding the Company's derivative instruments.

Enterprise Risk Management

RGA maintains a dedicated Enterprise Risk Management ("ERM") function that is responsible for analyzing and reporting the Company's risks on an aggregated basis; facilitating monitoring to ensure the Company's risks remain within its appetites, limits and tolerances; and ensuring, on an ongoing basis, that RGA's ERM objectives are met. This includes ensuring proper risk controls are in place; risks are effectively identified, assessed, and managed; and key risks to which the Company is exposed are disclosed to appropriate stakeholders. The ERM function plays an important role in fostering the Company's risk management culture and practices.

Enterprise Risk Management Structure and Governance

The Board of Directors ("the Board") oversees enterprise risk through its standing committees. The Finance, Investments, and Risk Management (FIRM) Committee of the Board oversees the management of the Company's ERM program and policies. The FIRM receives a comprehensive quarterly risk report, which describes the Company's key risk exposures using quantitative and qualitative assessments and includes information about breaches, exceptions, and waivers.

The Company's Global Chief Risk Officer ("CRO") leads the dedicated ERM function. The CRO reports to the Chief Executive Officer ("CEO") and has direct access to the Board through the FIRM Committee with formal reporting occurring quarterly. The CRO is supported by a network of Business Unit Chief Risk Officers and Risk Management Officers throughout the business who are responsible for the analysis and management of risks within their scope. A Lead Risk Management Officer is assigned to each risk to take overall responsibility to monitor and assess the risk consistently across all markets.

In addition to leading the ERM function, the CRO also chairs the Company's Risk Management Steering Committee ("RMSC"), which is made up of senior management executives, including the CEO, the Chief Financial Officer ("CFO"), and the Chief Operating Officer, among others. The RMSC approves targets and limits for each material risk at the consolidated level and reviews these limits at least annually. Exposure to these risks is calculated and presented to the RMSC at least quarterly. Any waiver or exception to established risk limits needs to be approved by the RMSC. The Company also has risk-focused committees such as the Business Continuity and Information Governance Steering Committee, Consolidated Investment Committee, Derivatives Risk Oversight Committee, Asset Liability Management Committee, Actuarial Standards Group, Collateral and Liquidity Committee, and the Currency Risk Management Committee. These committees are comprised of various risk and technical experts and have overlapping membership, enabling consistent and holistic management of risks. These committees report directly or indirectly to the RMSC. In addition to the risk committees at a consolidated level, some of RGA's operating entities have risk management committees that oversee relevant risks relative to segment-level risk targets and limits.

Enterprise Risk Management Framework

RGA's ERM framework provides a platform to assess the risk / return profiles of risks throughout the organization to enable enhanced decision making by business leaders. The ERM framework also guides the development and implementation of mitigation strategies to reduce exposures to these risks to acceptable levels.

RGA's ERM framework includes the following elements:

1. **Risk Culture:** Risk management is an integral part of the Company's culture and is embedded in RGA's business processes in accordance with RGA's risk philosophy. As the cornerstone of the ERM framework, a culture of prudent risk management reinforced by senior management plays a preeminent role in the effective management of risks assumed by RGA.

2. Risk Tolerance Statements: RGA communicates to stakeholders the amount of risk the Company is willing to accept through risk tolerance statements, which take into account the interactions and aggregation of risks across multiple risk areas. These statements provide a framework for managing the Company from an overall risk point of view.
3. Risk Targets and Limits: Risk Targets are established and managed in conjunction with strategic planning and set the desired range of risk that the Company seeks to assume. Risk Limits establish the maximum amount of each risk that the Company is willing to assume to remain within the Company's risk tolerance.
4. Risk Assessment Process: RGA uses qualitative and quantitative methods to assess key risks through a portfolio approach, which analyzes established and emerging risks in conjunction with other risks.
5. Business Specific Limits/Controls: These limits/controls provide additional safeguards against undesired risk exposures and are embedded in business processes. Examples include: maximum retention limits, pricing and underwriting reviews, per issuer limits, concentration limits, and standard treaty language.

Proactive risk monitoring and reporting enable early detection and mitigation of emerging risks. The RMSC monitors adherence to risk targets and limits through the ERM function, which reports regularly to the RMSC and FIRM Committee. The frequency of monitoring is tailored to the volatility of each risk. Risk escalation channels coupled with open communication lines enhance the mitigants explained above. The Company has devoted significant resources to developing its ERM program and expects to continue to do so in the future. Nonetheless, the Company's policies and procedures to identify, manage, and monitor risks may not be fully effective. Many of the Company's methods for managing risk are based on historical information, which may not be a good predictor of future risk exposures, such as the risk of a pandemic causing a large number of deaths. Management of operational, legal, and regulatory risk relies on policies and procedures which may not be fully effective under all scenarios.

Risk Categories

The Company categorizes its main risks as insurance risk, market risk, credit risk, and operational risk. Specific risk assessments and descriptions can be found below and in Item 1A - "Risk Factors."

Insurance Risk

Insurance risk is the risk of loss due to experience deviating adversely from expectations for mortality, morbidity, longevity, and policyholder behavior or lost future profits due to treaty recapture by clients. The Company uses multiple approaches to managing insurance risk: active insurance risk assessment and pricing appropriately for the risks assumed, transferring undesired risks, and managing the retained exposure prudently. These strategies are explained below.

Insurance Risk Assessment and Pricing

The Company has developed extensive expertise in assessing insurance risks which ultimately forms an integral part of ensuring that it is compensated commensurately for the risks it assumes and that it does not overpay for the risks it transfers to third parties. This expertise includes a vast array of market and product knowledge supported by a large information database of historical experience which is closely monitored. Analysis and experience studies derived from this database help form the basis for the Company's pricing assumptions which are used in developing rates for new risks. If actual mortality or morbidity experience is materially adverse, some reinsurance treaties allow for increases to future premium rates.

Misestimation of any key risk can threaten the long term viability of the Company. Further, the pricing process is a key operational risk and significant effort is applied to ensuring the appropriateness of pricing assumptions. Some of the safeguards the Company uses to ensure proper pricing are: experience studies, strict underwriting, sensitivity and scenario testing, pricing guidelines and controls, authority limits and internal and external pricing reviews. In addition, the ERM function provides additional pricing oversight which includes periodic pricing audits.

Specific stress scenarios and reverse stress tests are analyzed to better understand how the solvency and rating of the Company may be affected by specific events and to better understand the kind of events the Company's capital position can sustain.

Risk Transfer

To minimize volatility in financial results and reduce the impact of large losses, the Company transfers some of its insurance risk to third parties using vehicles such as retrocession and catastrophe coverage.

Individual Exposure Retrocession

In the normal course of business, the Company seeks to limit its exposure to loss on any single insured and to recover a portion of claims paid by ceding reinsurance to other insurance enterprises (or retrocessionaires) under excess coverage and

coinsurance contracts. In individual life markets, the Company retains a maximum of \$8.0 million of coverage per individual life. In certain limited situations the Company has retained more than \$8.0 million per individual life. The Company enters into agreements with other reinsurers to mitigate the residual risk related to the over-retained policies. Additionally, due to some lower face amount reinsurance coverages provided by the Company in addition to individual life, such as group life, disability, and health, under certain circumstances, the Company could potentially incur claims totaling more than \$8.0 million per individual life.

Catastrophic Excess Loss Retrocession

The Company seeks to limit its exposure to loss on its assumed catastrophic excess of loss reinsurance agreements by ceding a portion of its exposure to multiple retrocessionaires through retrocession line slips or directly to retrocession markets. The Company retains a maximum of \$20.0 million of catastrophic loss exposure per agreement and retrocedes up to \$50.0 million additional loss exposures to the retrocession markets. The Company limits its exposure on a country-by-country (and state-by-state in the U.S.) basis by managing its total exposure to all catastrophic excess of loss agreements bound within a given country to established maximum aggregate exposures. The maximum exposures are established and managed both on gross amounts issued prior to including retrocession and for amounts net of exposures retroceded.

Catastrophe Coverage

The Company accesses the markets each year for annual catastrophic coverages and reviews current coverage and pricing of current and alternate designs. Purchases vary from year to year based on the Company's perceived value of such coverages. The current policy covers events involving 8 or more insured deaths from a single occurrence and covers \$100.0 million of claims in excess of the Company's \$25.0 million deductible.

Mitigation of Retained Exposure

The Company retains most of the inbound insurance risk. The Company manages the retained exposure proactively using various mitigating factors such as diversification and limits. Diversification is the primary mitigating factor of short term volatility risk, but it also mitigates adverse impacts of changes in long term trends and catastrophic events. The Company's insured populations are dispersed globally, diversifying the insurance exposure because factors that cause actual experience to deviate materially from expectations do not affect all areas uniformly and synchronously or in close sequence. A variety of limits mitigate retained insurance risk. Examples of these limits include geographic exposure limits, which set the maximum amount of business that can be written in a given locale, and jumbo limits, which prevent excessive coverage on a given individual.

In the event that mortality or morbidity experience develops in excess of expectations, some reinsurance treaties allow for increases to future premium rates. Other treaties include experience refund provisions, which may also help reduce RGA's mortality risk.

RGA has various methods to manage its insurance risks, including access to the capital and reinsurance markets.

Market Risk

Market risk is the risk that net asset and liability values or results of operations will be affected adversely by changes in market conditions such as market prices, exchange rates, and nominal interest rates. The Company is primarily exposed to interest rate, foreign currency, inflation, real estate, and equity risks.

Interest Rate Risk

Interest rate risk is the potential for loss on a net asset and liability basis due to changes in interest rates, including both risk-free rate changes and credit spread changes. This risk arises from many of the Company's primary activities, as the Company invests substantial funds in interest-sensitive assets, primarily fixed maturity securities, and also has certain interest-sensitive contract liabilities. A prolonged period where market yields are significantly below the book yields of the Company's asset portfolio puts downward pressure on portfolio book yields. The Company has been proactive in its investment strategies, reinsurance structures and overall asset-liability management practices to reduce the risk of unfavorable consequences in this type of environment.

The Company manages interest rate risk to maximize the return on the Company's capital and to preserve the value created by its business operations within certain constraints. For example, certain management and monitoring processes are designed to minimize the effect of sudden and/or sustained changes in interest rates on fair value, cash flows, and net interest income. The Company manages its exposure to interest rates principally by managing the relative matching of the cash flows of its liabilities and assets.

The following table presents the account values, the weighted average interest-crediting rates and minimum guaranteed rate ranges for the contracts containing guaranteed rates by major class of interest-sensitive product as of December 31, 2016 and 2015 (dollars in thousands):

Interest Sensitive Contract Liability	Account Value		Current Weighted-Average Interest Crediting Rate		Minimum Guaranteed Rate Ranges	
	2016	2015	2016	2015	2016	2015
Traditional individual fixed annuities	\$ 5,377,061	\$ 5,148,415	2.86%	2.83%	0.50 – 4.50%	0.50 – 4.50%
Equity-indexed annuities	4,243,481	4,475,388	1.69	1.58	1.00 – 3.00	1.00 – 3.00
Individual variable annuity contracts	4,781	4,911	2.64	2.58	0.33 – 3.13	0.33 – 3.13
Guaranteed investment contracts	1,054,747	622,523	1.17	1.26	0.31 – 4.50	0.00 – 4.50
Universal life – type policies	2,761,886	2,808,679	4.03	4.01	3.00 – 6.00	3.00 – 6.00

The following table presents the account values by each minimum guaranteed rate, rounded to the nearest percentage, by class of interest-sensitive product as of December 31, 2016 and 2015 (dollars in thousands):

Interest Sensitive Contract Liability	Account Value as of December 31, 2016						
	1%	2%	3%	4%	5%	6%	Total
Traditional individual fixed annuities	\$ 659,734	\$ 636,455	\$ 3,371,758	\$ 697,216	\$ 11,898	\$ —	\$ 5,377,061
Equity-indexed annuities	688,796	2,612,985	941,700	—	—	—	4,243,481
Individual variable annuity contracts	—	—	4,781	—	—	—	4,781
Guaranteed investment contracts	800,082	192,812	—	36,537	25,316	—	1,054,747
Universal life – type policies	—	—	49,706	2,631,139	57,751	23,290	2,761,886

Interest Sensitive Contract Liability	Account Value as of December 31, 2015						
	1%	2%	3%	4%	5%	6%	Total
Traditional individual fixed annuities	\$ 401,934	\$ 679,165	\$ 3,324,805	\$ 730,056	\$ 12,455	\$ —	\$ 5,148,415
Equity-indexed annuities	696,737	2,756,136	1,022,515	—	—	—	4,475,388
Individual variable annuity contracts	6	—	4,905	—	—	—	4,911
Guaranteed investment contracts	407,107	153,562	—	36,537	25,317	—	622,523
Universal life – type policies	—	—	48,679	2,678,488	58,081	23,431	2,808,679

The spread profits on the Company's fixed annuity and interest-sensitive whole life, universal life ("UL") and fixed portion of variable universal life ("VUL") insurance policies are at risk if interest rates decline and remain relatively low for a period of time, which has generally been the case in recent years. Should interest rates remain at current levels, which are significantly lower than those existing prior to the declines of recent years, the average earned rate of return on the Company's annuity and UL investment portfolios will continue to decline. Declining portfolio yields may cause the spreads between investment portfolio yields and the interest rate credited to contract holders to deteriorate as the Company's ability to manage spreads can become limited by minimum guaranteed rates on annuity and UL policies. In 2016, minimum guaranteed rates on non-variable annuity and UL policies generally ranged from 0.50% to 6.00%, with an average guaranteed rate of approximately 2.69%. In 2015, minimum guaranteed rates on non-variable annuity and UL policies generally ranged from 0.50% to 6.00%, with an average guaranteed rate of approximately 2.78%.

Interest rate spreads are managed for near term income through a combination of crediting rate actions and portfolio management. Certain annuity products contain crediting rates that reset annually, of which \$4,218.6 million and \$3,968.0 million of account balances are not subject to surrender charges as of December 31, 2016 and 2015, respectively, with substantially all of these already at their minimum guaranteed rates. As such, certain management and monitoring processes are designed to minimize the effect of sudden and/or sustained changes in interest rates on fair value, cash flows, and net interest income.

The Company's exposure to interest rate price risk and interest rate cash flow risk is reviewed on a quarterly basis. Interest rate price risk exposure is measured using interest rate sensitivity analysis to determine the change in fair value of the Company's financial instruments in the event of a hypothetical change in interest rates. Interest rate cash flow risk exposure is measured using interest rate sensitivity analysis to determine the Company's variability in cash flows in the event of a hypothetical change in interest rates.

Interest rate sensitivity analysis is used to measure the Company's interest rate price risk by computing estimated changes in fair value of fixed rate assets and liabilities in the event of a hypothetical 100 basis point change (increase or decrease) in market interest rates. The Company does not have fixed rate instruments classified as trading securities. The Company's projected net decrease in fair value of financial instruments in the event of a 100 basis point increase in market interest rates at its fiscal years ended December 31, 2016 and 2015 was \$876.5 million and \$774.1 million, respectively.

The calculation of fair value is based on the net present value of estimated discounted cash flows expected over the life of the market risk sensitive instruments, using market prepayment assumptions and market rates of interest provided by independent broker quotations and other public sources, with adjustments made to reflect the shift in the treasury yield curve as appropriate.

The interest rate sensitivity relating to the Company's fixed maturity securities is assessed using hypothetical scenarios that assume positive and negative 50 and 100 basis point parallel shifts in the yield curves. This analysis assumes that the U.S., Canadian and other pertinent countries' yield curve shifts are of equal direction and magnitude. Change in value of individual securities is estimated consistently under each scenario using a commercial valuation tool. The Company's actual experience may differ from the results noted below particularly due to assumptions utilized or if events differ from those included in the methodology. The following tables summarize the results of this analysis for fixed maturity securities in the Company's investment portfolio as of the dates indicated (dollars in millions):

Interest Rate Analysis of Estimated Fair Value of Fixed Maturity Securities					
December 31, 2016:	-100 bps	-50 bps	-	50 bps	100 bps
Total estimated fair value	\$ 34,649	\$ 33,346	\$ 32,094	\$ 30,907	\$ 29,810
% Change in estimated fair value from base	8.0%	3.9%	—%	(3.7)%	(7.1)%
\$ Change in estimated fair value from base	\$ 2,555	\$ 1,252	\$ —	\$ (1,187)	\$ (2,284)
December 31, 2015:	-100 bps	-50 bps	-	50 bps	100 bps
Total estimated fair value	\$ 32,101	\$ 30,841	\$ 29,643	\$ 28,520	\$ 27,485
% Change in estimated fair value from base	8.3%	4.0%	—%	(3.8)%	(7.3)%
\$ Change in estimated fair value from base	\$ 2,458	\$ 1,198	\$ —	\$ (1,123)	\$ (2,158)

Interest rate sensitivity analysis is also used to measure the Company's interest rate cash flow risk by computing estimated changes in the expected cash flows for floating rate assets and liabilities over a one year period following an instantaneous, parallel, hypothetical 100 basis point change (increase or decrease) in market interest rates. The Company does not have variable rate instruments classified as trading securities. The Company's projected decrease in cash flows associated with floating rate instruments in the event of an instantaneous 100 basis point decrease in market interest rates for its fiscal years ended December 31, 2016 and 2015 was \$33.7 million and \$28.8 million, respectively.

Computations of prospective effects of hypothetical interest rate changes are based on numerous assumptions, and should not be relied on as indicative of future results. Further, the computations do not contemplate any actions management could undertake in response to changes in interest rates. Certain shortcomings are inherent in the method of analysis presented in the computation of the estimated fair value of fixed maturity securities and the estimated cash flows of floating rate instruments, which constitute forward-looking statements. Actual values may differ materially from those projections presented due to a number of factors, including, without limitation, market conditions varying from assumptions used in the calculation of the fair value.

In order to reduce the exposure to changes in fair values from interest rate fluctuations, the Company has developed strategies to manage the net interest rate sensitivity of its assets and liabilities. In addition, from time to time, the Company has utilized the swap market to manage the sensitivity of fair values to interest rate fluctuations.

Foreign Currency Risk

The Company is subject to foreign currency translation, transaction, and net income exposure. The Company manages its exposure to currency principally by currency matching invested assets with the underlying liabilities to the extent possible. The Company has in place net investment hedges for a portion of its investments in its Canadian operations to reduce excess exposure to these currencies. Translation differences resulting from translating foreign subsidiary balances to U.S. dollars are reflected in stockholders' equity on the consolidated balance sheets.

The Company generally does not hedge the foreign currency exposure of its subsidiaries transacting business in currencies other than their functional currency (transaction exposure). However, the Company has entered into cross currency swaps to manage exposure to specific currencies. The majority of the Company's foreign currency transactions are denominated in Australian dollars, British pounds, Canadian dollars, Euros, Japanese yen, Korean won and the South African rand.

The maximum amount of assets held in a specific currency (with the exception of the U.S. dollar) is measured relative to risk targets and is monitored regularly.

The Company does not hedge the income statement risk associated with translating foreign currencies. The foreign exchange risk sensitivity of the Company's consolidated pre-tax income is assessed using hypothetical test scenarios. Actual results may differ from the results noted below particularly due to assumptions utilized or if events occur that were not included in the methodology. For more information on this risk, see "Item 1A - Risk Factors - Risks Related to Our Business." In general, a weaker U.S. dollar relative to foreign currencies has a favorable impact on the Company's income before income taxes. The

following tables summarize the impact on the Company's reported income before income taxes of an immediate favorable or unfavorable change in each of the foreign exchange rates to which the Company has exposure (dollars in thousands):

Year Ended December 31, 2016	Unfavorable			Favorable	
	-10%	-5%	-	5%	10%
Income before income taxes	\$ 996,109	\$ 1,020,028	\$ 1,043,946	\$ 1,067,864	\$ 1,091,783
% change of income before income taxes from base	(4.6)%	(2.3)%	—%	2.3%	4.6%
\$ change of income before income taxes from base	\$ (47,837)	\$ (23,918)	\$ —	\$ 23,918	\$ 47,837

Year Ended December 31, 2015	Unfavorable			Favorable	
	-10%	-5%	-	5%	10%
Income before income taxes	\$ 701,000	\$ 722,898	\$ 744,795	\$ 766,692	\$ 788,590
% change of income before income taxes from base	(5.9)%	(2.9)%	—%	2.9%	5.9%
\$ change of income before income taxes from base	\$ (43,795)	\$ (21,897)	\$ —	\$ 21,897	\$ 43,795

Inflation Risk

The primary direct effect on the Company of inflation is the increase in operating expenses. A large portion of the Company's operating expenses consists of salaries, which are subject to wage increases at least partly affected by the rate of inflation. The rate of inflation also has an indirect effect on the Company. To the extent that a government's policies to control the level of inflation result in changes in interest rates, the Company's investment income is affected.

The Company reinsures annuities with benefits indexed to the cost of living. These benefits are generally hedged with a combination of CPI swaps and indexed bonds.

Long Term Care products have an inflation component linked to the future cost of such services. If health care costs increase at a much larger rate than what is prevalent in the nominal interest rates available in the markets, the Company may not earn enough investment yield to pay future claims on such products.

Real Estate Risk

The Company has investments in direct real estate equity and debt instruments collateralized by real estate ("real estate loans"). Real estate equity risks include significant reduction in valuations, which could be caused by downturns in the broad economy or in specific geographic regions or sectors. In addition, real estate loan risks include defaults, natural disasters, borrower or tenant bankruptcy and reduced liquidity. Real estate loan risks are partially mitigated by the excess of the value of the property over the loan principle, which provides a buffer should the value of the real estate decrease. The Company manages its real estate loan risk by diversifying by property type and geography and through exposure limits.

Equity Risk

Equity risk is the risk that net asset and liability (e.g. variable annuities or other equity linked exposures) values or revenues will be affected adversely by changes in equity markets. The Company assumes equity risk from alternative investments, fixed indexed annuities and variable annuities. The Company uses equity options to minimize its exposure to movements in equity markets that have a direct correlation with certain of its reinsurance products.

Alternative Investments

Alternative investments are investments in non-traditional asset classes that primarily back the Company's capital and surplus. The Company generally restricts the alternative investments portfolio to non-liability supporting assets: that is, free surplus. For (re)insurance companies, alternative investments generally encompass: hedge funds, owned commercial real estate, emerging markets debt, distressed debt, commodities, infrastructure, tax credits, and equities, both public and private. The Company mitigates its exposure to alternative investments by limiting the size of the alternative investments holding.

Fixed Indexed Annuities

Credits for fixed indexed annuities are affected by changes in equity markets. Thus the fair value of the benefit is primarily a function of index returns and volatility. The Company hedges most of the underlying equity exposure.

Variable Annuities

The Company reinsures variable annuities including those with guaranteed minimum death benefits ("GMDB"), guaranteed minimum income benefits ("GMIB"), guaranteed minimum accumulation benefits ("GMAB") and guaranteed minimum withdrawal benefits ("GMWB"). Strong equity markets, increases in interest rates and decreases in volatility will generally decrease the fair value of the liabilities underlying the benefits. Conversely, a decrease in the equity markets along with

a decrease in interest rates and an increase in volatility will generally result in an increase in the fair value of the liabilities underlying the benefits, which has the effect of increasing reserves and lowering earnings. The Company maintains a customized dynamic hedging program that is designed to substantially mitigate the risks associated with income volatility around the change in reserves on guaranteed benefits, ignoring the Company's own credit risk assessment. However, the hedge positions may not fully offset the changes in the carrying value of the guarantees due to, among other things, time lags, high levels of volatility in the equity and derivative markets, extreme swings in interest rates, unexpected contract holder behavior, and divergence between the performance of the underlying funds and hedging indices. These factors, individually or collectively, may have a material adverse effect on the Company's net income, financial condition or liquidity. The table below provides a summary of variable annuity account values and the fair value of the guaranteed benefits as of December 31, 2016 and 2015.

(dollars in millions)	December 31,	
	2016	2015
No guarantee minimum benefits	\$ 731	\$ 782
GMDB only	58	62
GMIB only	5	5
GMAB only	28	33
GMWB only	1,334	1,425
GMDB / WB	335	359
Other	19	22
Total variable annuity account values	\$ 2,510	\$ 2,688
Fair value of liabilities associated with living benefit riders	\$ 185	\$ 192

Credit Risk

Credit risk is the risk of loss due to counterparty (obligor, client, retrocessionaire, or partner) credit deterioration or unwillingness to meet its obligations. Credit risk has two forms: investment credit risk (asset default and credit migration) and insurance counterparty risk.

Investment Credit Risk

Investment credit risk, which includes default risk, is risk of loss due to credit quality deterioration of an individual financial investment, derivative or non-derivative contract or instrument. Credit quality deterioration may or may not be accompanied by a ratings downgrade. Generally, the investment credit exposure for fixed maturity securities is limited to the fair value, net of any collateral received, at the reporting date.

The Company manages investment credit risk using per-issuer investment limits. In addition to per-issuer limits, the Company also limits the total amounts of investments per rating category. An automated compliance system checks for compliance for all investment positions and sends warning messages when there is a breach. The Company manages its credit risk related to over-the-counter derivatives by entering into transactions with creditworthy counterparties, maintaining collateral arrangements and through the use of master agreements that provide for a single net payment to be made by one counterparty to another at each due date and upon termination. Because futures are transacted through regulated exchanges, and positions are marked to market on a daily basis, the Company has minimal exposure to credit-related losses in the event of nonperformance by counterparties to such derivative instruments.

The Company enters into various collateral arrangements, which require both the posting and accepting of collateral in connection with its derivative instruments. Collateral agreements contain attachment thresholds that vary depending on the posting party's financial strength ratings. Additionally, a decrease in the Company's financial strength rating to a specified level results in potential settlement of the derivative positions under the Company's agreements with its counterparties. The Collateral and Liquidity Committee sets rules, approves and oversees all deals requiring collateral. See "Credit Risk" in Note 5 – "Derivative Instruments" in the Notes to Consolidated Financial Statements for additional information on credit risk related to derivatives.

Insurance Counterparty Risk

Insurance counterparty risk is the potential for the Company to incur losses due to a client, retrocessionaire, or partner becoming distressed or insolvent. This includes run-on-the-bank risk and collection risk.

Run-on-the-Bank

The risk that a client's in force block incurs substantial surrenders and/or lapses due to credit impairment, reputation damage or other market changes affecting the counterparty. Substantially higher than expected surrenders and/or lapses could result in inadequate in force business to recover cash paid out for acquisition costs.

Collection Risk

For clients and retrocessionaires, this includes their inability to satisfy a reinsurance agreement because the right of offset is disallowed by the receivership court; the reinsurance contract is rejected by the receiver, resulting in a premature termination of the contract; and/or the security supporting the transaction becomes unavailable to RGA.

The Company manages insurance counterparty risk by limiting the total exposure to a single counterparty and by only initiating contracts with creditworthy counterparties. In addition, some of the counterparties have set up trusts and letters of credit, reducing the Company's exposure to these counterparties.

Generally, RGA's insurance subsidiaries retrocede amounts in excess of their retention to RGA Reinsurance, Parkway Re, RGA Barbados, RGA Americas, Rockwood Re, Manor Re, RGA Worldwide or RGA Atlantic. External retrocessions are arranged through the Company's retrocession pools for amounts in excess of its retention. As of December 31, 2016, all retrocession pool members in this excess retention pool rated by the A.M. Best Company were rated "A-" or better. A rating of "A-" is the fourth highest rating out of sixteen possible ratings. For a majority of the retrocessionaires that were not rated, letters of credit or trust assets have been given as additional security. In addition, the Company performs annual financial and in force reviews of its retrocessionaires to evaluate financial stability and performance.

The Company has never experienced a material default in connection with retrocession arrangements, nor has it experienced any material difficulty in collecting claims recoverable from retrocessionaires; however, no assurance can be given as to the future performance of such retrocessionaires or as to the recoverability of any such claims.

Aggregate Counterparty Limits

In addition to investment credit limits and insurance counterparty limits, there are aggregate counterparty risk limits which include counterparty exposures from reinsurance, financing and investment activities at an aggregated level to control total exposure to a single counterparty. Counterparty risk aggregation is important because it enables the Company to capture risk exposures at a comprehensive level and under more extreme circumstances compared to analyzing the components individually.

All counterparty exposures are calculated on a quarterly basis, reviewed by management and monitored by the ERM function.

Operational Risk

Operational risk is the risk of loss, or lost business opportunities, due to inadequate or failed internal processes, people, or systems or due to external events. These risks are sometimes residual risks after insurance, market, and credit risks have been identified. Identified operational risks are divided into four areas and are evaluated through a quarterly qualitative assessment involving Risk Management Officers across RGA's business units. The four areas include the following:

Process Risks

Process risks include known factors within the Company's key operational processes (such as administration, claims, underwriting, investment operations, retrocession, pricing, disruption of operations, information security, and financial reporting) that could have potential effects on the Company's ability to meet business objectives.

Legal/Regulatory Risks

Legal and regulatory risks include the various legal, compliance, sovereign, and regulatory obligations and concerns faced by the Company. This risk area often intersects with the Company's core operational process risk areas. Given the scope of the Company's business and the number of countries in which it operates, this set of risks has the potential to affect the business locally, regionally, or globally.

Financial Risks

Financial risks take into account known factors related to collateral, expenses, financing, liquidity, tax, and valuation. There are many aspects to this set of risks that are important to the operations of the Company and its ability to meet obligations with its clients, shareholders, and regulators.

Intangibles Risks

Intangibles risks include human capital, ratings, reputation, and strategy. These risks are core to managing the Company's brand and market confidence as well as maintaining its ability to acquire and retain the appropriate expertise to execute and operate the business.

New Accounting Standards

See "New Accounting Pronouncements" in Note 2 — "Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Information required by Item 7A is contained in Item 7 under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Market Risk”

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES

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REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31, 2016	December 31, 2015
(Dollars in thousands, except share data)		
Assets		
Fixed maturity securities:		
Available-for-sale at fair value (amortized cost of \$30,211,787 and \$28,322,977)	\$ 32,093,625	\$ 29,642,905
Mortgage loans on real estate (net of allowances of \$7,685 and \$6,813)	3,775,522	3,129,951
Policy loans	1,427,602	1,468,796
Funds withheld at interest	5,875,919	5,880,203
Short-term investments	76,710	558,284
Other invested assets	1,591,940	1,298,120
Total investments	44,841,318	41,978,259
Cash and cash equivalents	1,200,718	1,525,275
Accrued investment income	347,173	339,452
Premiums receivable and other reinsurance balances	1,930,755	1,797,504
Reinsurance ceded receivables	683,972	637,859
Deferred policy acquisition costs	3,338,605	3,392,437
Other assets	755,338	712,366
Total assets	\$ 53,097,879	\$ 50,383,152
Liabilities and Stockholders' Equity		
Future policy benefits	\$ 19,581,573	\$ 19,612,251
Interest-sensitive contract liabilities	14,029,354	13,663,873
Other policy claims and benefits	4,263,026	4,094,640
Other reinsurance balances	388,989	296,899
Deferred income taxes	2,770,640	2,218,328
Other liabilities	1,041,880	1,165,071
Long-term debt	3,088,635	2,297,548
Collateral finance and securitization notes	840,700	899,161
Total liabilities	46,004,797	44,247,771
Commitments and contingent liabilities (See Note 12)		
Stockholders' Equity:		
Preferred stock (par value \$.01 per share; 10,000,000 shares authorized; no shares issued or outstanding)	—	—
Common stock (par value \$.01 per share; 140,000,000 shares authorized; shares issued: 79,137,758 at December 31, 2016 and 2015)	791	791
Additional paid-in-capital	1,848,611	1,816,142
Retained earnings	5,199,130	4,620,303
Treasury stock, at cost - 14,835,256 and 13,933,232 shares	(1,094,779)	(1,010,139)
Accumulated other comprehensive income	1,139,329	708,284
Total stockholders' equity	7,093,082	6,135,381
Total liabilities and stockholders' equity	\$ 53,097,879	\$ 50,383,152

See accompanying notes to consolidated financial statements.

REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME

	For the years ended December 31,		
	2016	2015	2014
(Dollars in thousands, except per share data)			
Revenues			
Net premiums	\$ 9,248,871	\$ 8,570,741	\$ 8,669,854
Investment income, net of related expenses	1,911,886	1,734,495	1,713,691
Investment related gains (losses), net:			
Other-than-temporary impairments on fixed maturity securities	(38,805)	(57,380)	(7,766)
Other-than-temporary impairments on fixed maturity securities transferred to other comprehensive income	74	—	—
Other investment related gains (losses), net	132,926	(107,370)	193,959
Total investment related gains (losses), net	94,195	(164,750)	186,193
Other revenues	266,559	277,692	334,456
Total revenues	11,521,511	10,418,178	10,904,194
Benefits and expenses			
Claims and other policy benefits	7,993,375	7,489,382	7,406,641
Interest credited	364,691	336,964	451,031
Policy acquisition costs and other insurance expenses	1,310,540	1,127,486	1,391,433
Other operating expenses	645,509	554,044	538,415
Interest expense	137,623	142,863	96,700
Collateral finance and securitization expense	25,827	22,644	11,441
Total benefits and expenses	10,477,565	9,673,383	9,895,661
Income before income taxes	1,043,946	744,795	1,008,533
Provision for income taxes	342,503	242,629	324,486
Net income	\$ 701,443	\$ 502,166	\$ 684,047
Earnings per share			
Basic earnings per share	\$ 10.91	\$ 7.55	\$ 9.88
Diluted earnings per share	10.79	7.46	9.78
Dividends declared per share	\$ 1.56	\$ 1.40	\$ 1.26

See accompanying notes to consolidated financial statements.

REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	For the years ended December 31,		
	2016	2015	2014
Comprehensive income (loss)			
Net Income	\$ 701,443	\$ 502,166	\$ 684,047
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	8,610	(262,998)	(125,236)
Net unrealized investment gains (losses)	419,336	(689,076)	804,528
Defined benefit pension and postretirement plan adjustments	3,099	3,229	(27,770)
Total other comprehensive income (loss), net of tax	431,045	(948,845)	651,522
Total comprehensive income (loss)	\$ 1,132,488	\$ (446,679)	\$ 1,335,569

See accompanying notes to consolidated financial statements.

REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock	Additional Paid In Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income	Total
Balance, December 31, 2013	\$ 791	\$ 1,777,906	\$ 3,659,938	\$ (508,715)	\$ 1,005,607	\$ 5,935,527
Net income			684,047			684,047
Total other comprehensive income (loss)					651,522	651,522
Dividends to stockholders			(87,256)			(87,256)
Purchase of treasury stock				(201,525)		(201,525)
Reissuance of treasury stock		20,373	(17,082)	37,846		41,137
Balance, December 31, 2014	791	1,798,279	4,239,647	(672,394)	1,657,129	7,023,452
Net income			502,166			502,166
Total other comprehensive income (loss)					(948,845)	(948,845)
Dividends to stockholders			(93,381)			(93,381)
Purchase of treasury stock				(384,519)		(384,519)
Reissuance of treasury stock		17,863	(28,129)	46,774		36,508
Balance, December 31, 2015	791	1,816,142	4,620,303	(1,010,139)	708,284	6,135,381
Net income			701,443			701,443
Total other comprehensive income (loss)					431,045	431,045
Dividends to stockholders			(100,371)			(100,371)
Purchase of treasury stock				(122,916)		(122,916)
Reissuance of treasury stock		32,469	(22,245)	38,276		48,500
Balance, December 31, 2016	\$ 791	\$ 1,848,611	\$ 5,199,130	\$ (1,094,779)	\$ 1,139,329	\$ 7,093,082

See accompanying notes to consolidated financial statements.

REINSURANCE GROUP OF AMERICA, INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOW
(in thousands)

	For the years ended December 31,		
	2016	2015	2014
Cash flows from operating activities			
Net income	\$ 701,443	\$ 502,166	\$ 684,047
Adjustments to reconcile net income to net cash provided by operating activities:			
Change in operating assets and liabilities:			
Accrued investment income	(18,761)	(48,458)	(855)
Premiums receivable and other reinsurance balances	(156,836)	(313,882)	(136,710)
Deferred policy acquisition costs	31,024	(66,633)	101,493
Reinsurance ceded receivable balances	(53,221)	(11,740)	39,345
Future policy benefits, other policy claims and benefits, and other reinsurance balances	810,474	1,867,488	1,625,561
Deferred income taxes	293,777	148,996	170,731
Other assets and other liabilities, net	(98,675)	(55,345)	(17,244)
Amortization of net investment premiums, discounts and other	(93,952)	(77,303)	(102,459)
Depreciation and amortization expense	26,853	31,103	15,309
Investment related (gains) losses, net	(94,195)	164,750	(186,193)
Excess tax benefits from share-based payment arrangement	(162)	(2,963)	3,011
Other, net	117,949	(49,564)	140,119
Net cash provided by operating activities	1,465,718	2,088,615	2,336,155
Cash flows from investing activities			
Sales of fixed maturity securities available-for-sale	4,584,828	5,461,687	4,309,985
Maturities of fixed maturity securities available-for-sale	472,435	439,640	539,789
Sales of equity securities	434,518	81,319	361,831
Principal payments on mortgage loans on real estate	442,755	383,828	479,908
Principal payments on policy loans	88,840	21,322	63,785
Purchases of fixed maturity securities available-for-sale	(7,414,647)	(5,874,309)	(6,129,956)
Purchases of equity securities	(584,532)	(95,834)	(72,593)
Cash invested in mortgage loans on real estate	(1,092,876)	(810,092)	(721,836)
Cash invested in policy loans	(47,646)	(52,207)	(103,599)
Cash invested in funds withheld at interest	(32,597)	(339,062)	(86,588)
Purchase of businesses, net of cash acquired of \$69,823	—	(145,235)	—
Purchases of property and equipment	(44,642)	(23,553)	(88,361)
Cash paid under securities repurchase agreements	—	(101,203)	101,203
Change in short-term investments	465,628	(470,002)	38,060
Change in other invested assets	(97,790)	91,960	(2,573)
Net cash used in investing activities	(2,825,726)	(1,431,741)	(1,310,945)
Cash flows from financing activities			
Dividends to stockholders	(100,371)	(93,381)	(87,256)
Repayment of collateral finance and securitization notes	(64,571)	(19,732)	—
Proceeds from issuance of collateral finance and securitization notes	—	164,220	300,000
Proceeds from long-term debt issuance	799,984	—	100,000
Debt issuance costs	(8,766)	(4,748)	(4,260)
Principal payments of long-term debt	(2,479)	(2,380)	(772)
Purchases of treasury stock	(122,916)	(384,519)	(201,525)
Excess tax benefits from share-based payment arrangement	162	2,963	(3,011)
Exercise of stock options, net	15,321	11,151	9,246
Change in cash collateral for derivative positions and other arrangements	26,413	52,381	162,435
Deposits on universal life and other investment type policies and contracts	1,041,623	277,280	150,922
Withdrawals on universal life and other investment type policies and contracts	(529,011)	(711,517)	(681,338)
Net cash used in financing activities	1,055,389	(708,282)	(255,559)
Effect of exchange rate changes on cash	(19,938)	(68,986)	(47,629)
Change in cash and cash equivalents	(324,557)	(120,394)	722,022
Cash and cash equivalents, beginning of period	1,525,275	1,645,669	923,647
Cash and cash equivalents, end of period	\$ 1,200,718	\$ 1,525,275	\$ 1,645,669

Supplemental disclosures of cash flow information:

Interest paid	\$	156,727	\$	148,124	\$	136,499
Income taxes paid, net of refunds	\$	61,085	\$	41,577	\$	70,342
Non-cash transactions:						
Transfer of invested assets	\$	120,500	\$	2,092,558	\$	2,001,439
Accrual for capitalized assets	\$	—	\$	253	\$	24,458
Purchase of a business:						
Assets acquired, excluding cash acquired	\$	—	\$	4,040,175	\$	—
Liabilities assumed		—		(3,894,940)		—
Net cash paid on purchase	\$	—	\$	145,235	\$	—

See accompanying notes to consolidated financial statements.

Reinsurance Group of America, Incorporated
Notes to consolidated financial statements
For the years ended December 31, 2016, 2015 and 2014

Note 1 BUSINESS AND BASIS OF PRESENTATION

Business

Reinsurance Group of America, Incorporated (“RGA”) is an insurance holding company that was formed on December 31, 1992. The consolidated financial statements herein include the assets, liabilities, and results of operations of RGA and its subsidiaries, all of which are wholly owned (collectively, the “Company”).

The Company is engaged in providing traditional reinsurance, which includes individual and group life and health, disability, and critical illness reinsurance. The Company also provides financial solutions, which includes longevity reinsurance, asset-intensive products, primarily annuities, and financial reinsurance.

Reinsurance is an arrangement under which an insurance company, the reinsurer, agrees to indemnify another insurance company, the ceding company, for all or a portion of the insurance risks underwritten by the ceding company. Reinsurance is designed to (i) reduce the net liability on individual risks, thereby enabling the ceding company to increase the volume of business it can underwrite, as well as increase the maximum risk it can underwrite on a single life or risk; (ii) stabilize operating results by leveling fluctuations in the ceding company’s loss experience; (iii) assist the ceding company to meet applicable regulatory requirements; and (iv) enhance the ceding company’s financial strength and surplus position.

Basis of Presentation

The consolidated financial statements of the Company have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosures of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The most significant estimates include those used in determining deferred policy acquisition costs, premiums receivable, future policy benefits, incurred but not reported claims, income taxes, valuation of investments and investment impairments, and valuation of embedded derivatives. Actual results could differ materially from the estimates and assumptions used by management.

The accompanying consolidated financial statements include the accounts of RGA and its subsidiaries, all of which are wholly owned, and any variable interest entities where the Company is the primary beneficiary. Entities in which the Company has significant influence over the operating and financing decisions but are not required to be consolidated are reported under the equity method of accounting. The Company evaluates variable interest entities in accordance with the general accounting principles for *Consolidation*. Intercompany balances and transactions have been eliminated.

There were no subsequent events, other than as disclosed in Note 20 - “Subsequent Events”, that would require disclosure or adjustments to the accompanying consolidated financial statements through the date the consolidated financial statements were issued.

Note 2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Investments

Fixed Maturity Securities

Fixed maturity securities classified as available-for-sale are reported at fair value and are so classified based upon the possibility that such securities could be sold prior to maturity if that action enables the Company to execute its investment philosophy and appropriately match investment results to operating and liquidity needs.

Unrealized gains and losses on fixed maturity securities classified as available-for-sale, less applicable deferred income taxes as well as related adjustments to deferred acquisition costs, if applicable, are reflected as a direct charge or credit to accumulated other comprehensive income (“AOCI”) in stockholders’ equity on the consolidated balance sheets.

Investment income is recognized as it accrues or is legally due. Realized gains and losses on sales of investments are included in investment related gains (losses), net, as are credit impairments that are other-than-temporary in nature. The cost of investments sold is primarily determined based upon the specific identification method.

Mortgage Loans on Real Estate

Mortgage loans on real estate are carried at unpaid principal balances, net of any unamortized premium or discount and valuation allowances. Interest income is accrued on the principal amount of the mortgage loan based on its contractual interest rate. Amortization of premiums and discounts is recorded using the effective yield method. The Company accrues interest on loans until it is probable the Company will not receive interest or the loan is 90 days past due. Interest income, amortization of premiums,

accretion of discounts and prepayment fees are reported in investment income, net of related expenses in the consolidated statements of income.

A mortgage loan is considered to be impaired when, based on the current information and events, it is probable that the Company will be unable to collect all amounts due according to the contractual terms of the mortgage agreement. Although all available and applicable factors are considered in the Company's analysis, loan-to-value and debt service coverage ratios are the most critical factors in determining impairment.

Valuation allowances on mortgage loans are established based upon inherent losses expected by management to be realized in connection with future dispositions or settlement of mortgage loans, including foreclosures. The Company establishes valuation allowances for estimated impairments on an individual loan basis as of the balance sheet date. Such valuation allowances are based on the excess carrying value of the loan over the present value of expected future cash flows discounted at the loan's original effective interest rate, the value of the loan's collateral if the loan is in the process of foreclosure or is otherwise collateral-dependent, or the loan's market value if the loan is being sold. Non-specific valuation allowances are established for mortgage loans based upon several loan factors, including the Company's historical experience for loan losses, defaults and loss severity, loss expectations for loans with similar risk characteristics and industry statistics. These evaluations are revised as conditions change and new information becomes available. In addition to historical experience, management considers qualitative factors that include the impact of changing macro-economic conditions, which may not be currently reflected in the loan portfolio performance, and the quality of the loan portfolio.

Any interest accrued or received on the net carrying amount of the impaired loan will be included in investment income or applied to the principal of the loan, depending on the assessment of the collectability of the loan. Mortgage loans deemed to be uncollectible or that have been foreclosed are charged off against the valuation allowances and subsequent recoveries, if any, are credited to the valuation allowances. Changes in valuation allowances are reported in investment related gains (losses), net on the consolidated statements of income.

The Company evaluates whether a mortgage loan modification represents a troubled debt restructuring. In a troubled debt restructuring, the Company grants concessions related to the borrower's financial difficulties. Generally, the types of concessions include: reduction of the contractual interest rate, extension of the maturity date at an interest rate lower than current market interest rates and/or a reduction of accrued interest. The Company considers the amount, timing and extent of the concession granted in determining any impairment or changes in the specific valuation allowance recorded in connection with the troubled debt restructuring. Through the continuous monitoring process, the Company may have recorded a specific valuation allowance prior to when the mortgage loan is modified in a troubled debt restructuring. Accordingly, the carrying value (after specific valuation allowance) before and after modification through a troubled debt restructuring may not change significantly, or may increase if the expected recovery is higher than the pre-modification recovery assessment.

Policy Loans

Policy loans are reported at the unpaid principal balance. Interest income on such loans is recorded as earned using the contractually agreed-upon interest rate. These policy loans present no credit risk because the amount of the loan cannot exceed the obligation due the ceding company upon the death of the insured or surrender of the underlying policy.

Funds Withheld at Interest

Funds withheld at interest represent amounts contractually withheld by ceding companies in accordance with reinsurance agreements. For agreements written on a modified coinsurance basis and agreements written on a coinsurance funds withheld basis, assets which support the net statutory reserves or as defined in the treaty, are withheld and legally owned by the ceding company. Interest, recorded in investment income, net of related expenses in the consolidated statements of income, accrues to these assets at calculated rates as defined by the treaty terms. Changes in the value of the equity options held within the funds withheld portfolio associated with equity-indexed annuity treaties are reflected in investment income.

Short-term Investments

Short-term investments represent investments with remaining maturities greater than three months but less than twelve months, at the date of purchase, and are stated at estimated fair value or amortized cost, which approximates estimated fair value. Interest on short-term investments is recorded in investment income, net of related expenses in the consolidated statements of income.

Other Invested Assets

In addition to derivative contracts discussed below, other invested assets include equity securities, contractholder-directed investments, limited partnership interests, investments in joint ventures (other than operating joint ventures), real estate-held-for-investment, equity release mortgages and structured loans. Equity securities are carried at fair value with the exception of the Company's investment in the Federal Home Loan Bank of Des Moines ("FHLB") common stock, which is carried at cost. The fair value option ("FVO") was elected for contractholder-directed investments supporting unit-linked variable annuity type liabilities which do not qualify for presentation and reporting as separate accounts. Effective January 1, 2016, changes in estimated

fair value of these securities are included in investment income, net of related expenses. Through December 31, 2015, substantially all of the changes in estimated fair value of these securities are included in investment related gains (losses), net. Limited partnership interests and structured loans are primarily carried at cost. Based on the nature and structure of these investments, they do not meet the characteristics of an equity security in accordance with applicable accounting standards. Joint ventures and certain limited partnerships are reported using the equity method of accounting.

Real estate held-for-investment, including related improvements, is stated at cost less accumulated depreciation. Depreciation is calculated on a straight-line basis over the estimated useful life of the property. The Company's real estate held-for-investment is primarily acquired upon foreclosure of mortgage loans, where the Company's cost basis is considered to be the estimated fair value of the property, less the estimated cost to sell, at the date of foreclosure. Equity release mortgages are carried at unpaid principal balances, net of any unamortized premium or discount and valuation allowance. Interest income is accrued on the principal amount of the equity release mortgage based on its contractual interest rate.

Other-than-Temporary Impairment

The Company identifies fixed maturity and equity securities that could potentially have credit impairments that are other-than-temporary by monitoring market events that could impact issuers' credit ratings, business climates, management changes, litigation, government actions and other similar factors. The Company also monitors late payments, pricing levels, rating agency actions, key financial ratios, financial statements, revenue forecasts and cash flow projections as indicators of credit issues.

The Company reviews all securities on a case-by-case basis to determine whether an other-than-temporary decline in value exists and whether losses should be recognized. The Company considers relevant facts and circumstances in evaluating whether a credit or interest rate-related impairment of a security is other-than-temporary. Relevant facts and circumstances considered include: (1) the extent and length of time the fair value has been below cost; (2) the reasons for the decline in fair value; (3) the issuers financial position and access to capital; and (4) for fixed maturity securities, the Company's intent to sell a security or whether it is more likely than not it will be required to sell the security before the recovery of its amortized cost which, in some cases, may extend to maturity and for equity securities, the Company's ability and intent to hold the security for a period of time that allows for the recovery in value. To the extent the Company determines that a security is deemed to be other-than-temporarily impaired, an impairment loss is recognized.

Impairment losses on equity securities are reported in investment related gains (losses), net on the consolidated statements of income. Impairment losses on fixed maturity securities recognized in the financial statements are dependent on the facts and circumstances related to the specific security. If the Company intends to sell a security or it is more likely than not that it would be required to sell a security before the recovery of its amortized cost, less any recorded credit loss, it recognizes an other-than-temporary impairment in investment related gains (losses), net on the consolidated statements of income for the difference between amortized cost and fair value. If neither of these two conditions exists then the recognition of the other-than-temporary impairment is bifurcated and the Company recognizes the credit loss portion in investment related gains (losses), net and the non-credit loss portion in AOCI.

The Company estimates the amount of the credit loss component of a fixed maturity security impairment as the difference between amortized cost and the present value of the expected cash flows of the security. The present value is determined using the best estimate cash flows discounted at the effective interest rate implicit to the security at the date of purchase or the current yield to accrete an asset-backed or floating rate security. The techniques and assumptions for establishing the best estimate cash flows vary depending on the type of security. The asset-backed securities' cash flow estimates are based on security-specific facts and circumstances that may include collateral characteristics, expectations of delinquency and default rates, loss severity and prepayment speeds and structural support, including subordination and guarantees. The corporate fixed maturity security cash flow estimates are derived from scenario-based outcomes of expected corporate restructurings or the disposition of assets using security specific facts and circumstances including timing, security interests and loss severity.

In periods after an other-than-temporary impairment loss is recognized on a fixed maturity security, the Company will report the impaired security as if it had been purchased on the date it was impaired and will continue to estimate the present value of the estimated cash flows of the security. Accordingly, the discount (or reduced premium) based on the new cost basis is accreted into net investment income over the remaining term of the fixed maturity security in a prospective manner based on the amount and timing of estimated future cash flows.

The Company considers its cost method investments for other-than-temporary impairment when the carrying value of these investments exceeds the net asset value. The Company takes into consideration the severity and duration of this excess when deciding if the cost method investment is other-than-temporarily impaired. For equity method investments (including real estate ventures), the Company considers financial and other information provided by the investee, other known information and inherent risks in the underlying investments, as well as future capital commitments, in determining whether an impairment has occurred.

The Company periodically reviews its real estate held-for-investment for impairment and tests these investments for recoverability whenever events or changes in circumstances indicate the carrying amount of the property may not be recoverable and the carrying

value of the property exceeds its estimated fair value. Properties for which carrying values are greater than their undiscounted cash flows are written down to the estimated fair value.

Derivative Instruments

Overview

The Company utilizes a variety of derivative instruments including swaps, options, forwards and futures, primarily to manage or hedge interest rate risk, credit risk, inflation risk, foreign currency risk, market volatility and various other market risks associated with its business. The Company does not invest in derivatives for speculative purposes. It is the Company's policy to enter into derivative contracts primarily with highly rated parties. See Note 5 – "Derivative Instruments" for additional detail on the Company's derivative positions.

Accounting and Financial Statement Presentation of Derivatives

Derivatives are carried on the Company's consolidated balance sheets primarily in other invested assets or other liabilities, at fair value. Certain derivatives are subject to master netting provisions and reported as a net asset or liability. On the date a derivative contract is executed, the Company designates the derivative as (1) a fair value hedge, (2) a cash flow hedge, (3) a net investment hedge in a foreign operation or (4) free-standing derivatives held for other risk management purposes, which primarily involve managing asset or liability risks associated with the Company's reinsurance treaties which do not qualify for hedge accounting.

Changes in the fair value of free-standing derivative instruments, which do not receive accounting hedge treatment, are primarily reflected in investment related gains (losses), net.

Changes in the fair value of non-investment free-standing derivative instruments (e.g. mortality and longevity swaps), which do not receive accounting hedge treatment, are reflected in other revenues.

Hedge Documentation and Hedge Effectiveness

To qualify for hedge accounting, at the inception of the hedging relationship, the Company formally documents its risk management objective and strategy for undertaking the hedging transaction, as well as its designation of the hedge as either (i) a fair value hedge; (ii) a cash flow hedge; or (iii) a hedge of a net investment in a foreign operation. In this documentation, the Company sets forth how the hedging instrument is expected to hedge the designated risks related to the hedged item and sets forth the method that will be used to retrospectively and prospectively assess the hedging instrument's effectiveness and the method which will be used to measure ineffectiveness. A derivative designated as a hedging instrument must be assessed as being highly effective in offsetting the designated risk of the hedged item. Hedge effectiveness is formally assessed at inception and periodically throughout the life of the designated hedging relationship.

Under a fair value hedge, changes in the fair value of the hedging derivative, including amounts measured as ineffective, and changes in the fair value of the hedged item related to the designated risk being hedged, are reported within investment related gains (losses), net. The fair values of the hedging derivatives are exclusive of any accruals that are separately reported in the consolidated statement of income within interest income or interest expense to match the location of the hedged item.

Under a cash flow hedge, changes in the fair value of the hedging derivative measured as effective are reported within AOCI and the deferred gains or losses on the derivative are reclassified into the consolidated statement of income when the Company's earnings are affected by the variability in cash flows of the hedged item. Changes in the fair value of the hedging instrument measured as ineffective are reported within investment related gains (losses), net. The fair values of the hedging derivatives are exclusive of any accruals that are separately reported in the consolidated statement of income within interest income or interest expense to match the location of the hedged item.

In a hedge of a net investment in a foreign operation, changes in the fair value of the hedging derivative that are measured as effective are reported within AOCI consistent with the translation adjustment for the hedged net investment in the foreign operation. Changes in the fair value of the hedging instrument measured as ineffective are reported within investment related gains (losses), net.

The Company discontinues hedge accounting prospectively when: (i) it is determined that the derivative is no longer highly effective in offsetting changes in the estimated fair value or cash flows of a hedged item; (ii) the derivative expires, is sold, terminated, or exercised; (iii) it is no longer probable that the hedged forecasted transaction will occur; or (iv) the derivative is de-designated as a hedging instrument.

When hedge accounting is discontinued because it is determined that the derivative is not highly effective, the derivative continues to be carried in the consolidated balance sheets at fair value, with changes in fair value recognized in investment related gains (losses), net. The carrying value of the hedged asset or liability under a fair value hedge is no longer adjusted for changes in its estimated fair value due to the hedged risk, and the cumulative adjustment to its carrying value is amortized into income over the remaining life of the hedged item. Provided the hedged forecasted transaction occurrence is still probable, the changes in estimated fair value of derivatives recorded in other comprehensive income (loss) ("OCI") related to discontinued cash flow hedges are

released into the consolidated statement of income when the Company's earnings are affected by the variability in cash flows of the hedged item.

When hedge accounting is discontinued because it is no longer probable that the forecasted transactions will occur on the anticipated date or within two months of that date, the derivative continues to be carried in the consolidated balance sheets at its estimated fair value, with changes in estimated fair value recognized currently in investment related gains (losses), net. Deferred gains and losses of a derivative recorded in OCI pursuant to the discontinued cash flow hedge of a forecasted transaction that is no longer probable are recognized immediately in investment related gains (losses), net.

In all other situations in which hedge accounting is discontinued, the derivative is carried at its estimated fair value in the consolidated balance sheets, with changes in its estimated fair value recognized in the current period as investment related gains (losses), net.

Embedded Derivatives

The Company reinsures certain annuity products that contain terms that are deemed to be embedded derivatives, primarily equity-indexed annuities and variable annuities with guaranteed minimum benefits. The Company assesses reinsurance contract terms to identify embedded derivatives which are required to be bifurcated under the general accounting principles for *Derivatives and Hedging*. If the contract is not reported for in its entirety at fair value and it is determined that the terms of the embedded derivative are not clearly and closely related to the economic characteristics of the host contract, and that a separate instrument with the same terms would qualify as a derivative instrument, the embedded derivative is bifurcated from the host contract and accounted for separately.

Such embedded derivatives are carried on the consolidated balance sheets at fair value in the same line item as the host contract. Changes in the fair value of embedded derivatives associated with equity-indexed annuities are reflected in interest credited on the consolidated statements of income and changes in the fair value of embedded derivatives associated with variable annuity guaranteed minimum benefits are reflected in investment related gains (losses), net on the consolidated statements of income. See "Interest-Sensitive Contract Liabilities" below for additional information on embedded derivatives related to equity-indexed and variable annuities. The Company has implemented an economic hedging strategy to mitigate the volatility associated with its reinsurance of variable annuity guaranteed minimum benefits. The hedging strategy is designed such that changes in the fair value of the hedge contracts, primarily futures, swap contracts and options, move in the opposite direction of changes in the fair value of the embedded derivatives. While the Company actively manages its hedging program, the hedges that are in place may not be totally effective in offsetting the embedded derivative changes due to the many variables that must be managed and the Company may see a corresponding increase or decrease in the net liability. The Company has elected not to assess this hedging strategy for hedge accounting treatment.

Additionally, reinsurance treaties written on a modified coinsurance or funds withheld basis are subject to the general accounting principles for *Derivatives and Hedging* related to embedded derivatives. The Company's funds withheld at interest balances are primarily associated with its reinsurance treaties structured on a modified coinsurance or funds withheld basis, the majority of which were subject to the general accounting principles for *Derivatives and Hedging* related to embedded derivatives. Management believes the embedded derivative feature in each of these reinsurance treaties is similar to a total return swap on the assets held by the ceding companies. The valuation of embedded derivatives is sensitive to the investment credit spread environment. Changes in investment credit spreads are also affected by the application of a credit valuation adjustment ("CVA"). The fair value calculation of an embedded derivative in an asset position utilizes a CVA based on the ceding company's credit risk. Conversely, the fair value calculation of an embedded derivative in a liability position utilizes a CVA based on the Company's credit risk. Generally, an increase in investment credit spreads, ignoring changes in the CVA, will have a negative impact on the fair value of the embedded derivative (decrease in income). The fair value of the embedded derivatives is included in the funds withheld at interest line item on the consolidated balance sheets. The change in the fair value of the embedded derivatives is recorded in investment related gains (losses), net on the consolidated statements of income.

The Company has entered into various financial reinsurance treaties on a funds withheld and modified coinsurance basis. These treaties do not transfer significant insurance risk and are recorded on a deposit method of accounting with the Company earning a net fee. As a result of the experience refund provisions contained in these treaties, the value of the embedded derivatives in these contracts is currently considered immaterial. The Company monitors the performance of these treaties on a quarterly basis. Significant adverse performance or losses on these treaties may result in a loss associated with the embedded derivative.

Fair Value Measurements

General accounting principles for *Fair Value Measurements and Disclosures* define fair value, establish a framework for measuring fair value, establish a fair value hierarchy based on the inputs used to measure fair value and enhance disclosure requirements for fair value measurements. In compliance with these principles, the Company has categorized its assets and liabilities, based on the priority of the inputs to the valuation technique, into a three level hierarchy or separately for assets measured using the net asset value ("NAV"). The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities

(Level 1), the second highest priority to quoted prices in markets that are not active or inputs that are observable either directly or indirectly (Level 2) and the lowest priority to unobservable inputs (Level 3).

If the inputs used to measure fair value fall within different levels of the hierarchy, the category level is based on the lowest priority level input that is significant to the fair value measurement of the asset or liability.

See Note 6 - "Fair Value of Assets and Liabilities" for further details on the Company's assets and liabilities recorded at fair value.

Cash and Cash Equivalents

Cash and cash equivalents include cash on deposit and highly liquid debt instruments purchased with an original maturity of three months or less.

Premiums Receivable

Premiums are accrued when due and in accordance with information received from the ceding company. When the Company enters into a new reinsurance agreement, it records accruals based on the terms of the reinsurance treaty. Similarly, when a ceding company fails to report information on a timely basis, the Company records accruals based on the terms of the reinsurance treaty as well as historical experience. Other management estimates include adjustments for increased in force on existing treaties, lapsed premiums given historical experience, the financial health of specific ceding companies, collateral value and the legal right of offset on related amounts (i.e. allowances and claims) owed to the ceding company. Under the legal right of offset provisions in its reinsurance treaties, the Company can withhold payments for allowances and claims from unpaid premiums. Based on its review of these factors and historical experience, the Company did not believe a provision for doubtful accounts was necessary as of December 31, 2016 or 2015.

Reinsurance Ceded Receivables

The Company generally reports retrocession activity on a gross basis. Amounts paid or deemed to have been paid for reinsurance are reflected in reinsurance ceded receivables. The cost of reinsurance related to long-duration contracts is recognized over the terms of the reinsured policies on a basis consistent with the reporting of those policies.

Deferred Policy Acquisition Costs

Costs of acquiring new business, which vary with and are directly related to the production of new business, have been deferred to the extent that such costs are deemed recoverable from future premiums or gross profits. Such costs include commissions and allowances as well as certain costs of policy issuance and underwriting. Non-commission costs related to the acquisition of new and renewal insurance contracts may be deferred only if they meet the following criteria:

- Incremental direct costs of a successful contract acquisition
- Portions of employees' salaries and benefits directly related to time spent performing specified acquisition activities for a contract that has been acquired or renewed
- Other costs directly related to the specified acquisition or renewal activities that would not have been incurred had that acquisition contract transaction not occurred

The Company tests the recoverability for each year of business at issue before establishing additional deferred acquisition costs ("DAC"). The Company also performs annual tests to establish that DAC are expected to remain recoverable, and if financial performance significantly deteriorates to the point where a deficiency exists, a cumulative charge to current operations will be recorded. No such adjustments related to DAC recoverability were made in 2016, 2015 and 2014.

DAC related to traditional life insurance contracts are amortized with interest over the premium-paying period of the related policies in proportion to the ratio of individual period premium revenues to total anticipated premium revenues over the life of the policy. Such anticipated premium revenues are estimated using the same assumptions used for computing liabilities for future policy benefits.

DAC related to interest-sensitive life and investment-type policies are amortized over the lives of the policies, in proportion to the gross profits realized from mortality, investment income less interest credited, and expense margins.

Other Reinsurance Balances

The Company assumes and retrocedes financial reinsurance contracts that do not expose it to a reasonable possibility of loss from insurance risk. These contracts are reported as deposits and are included in other reinsurance assets/liabilities. The amount of revenue reported in other revenues on these contracts represents fees and the cost of insurance under the terms of the reinsurance agreement. Assets and liabilities are reported on a net or gross basis, depending on the specific details within each treaty. Reinsurance agreements reported on a net basis, where a legal right of offset exists, are generally included in other reinsurance balances on the consolidated balance sheets. Balances resulting from the assumption and/or subsequent transfer of benefits and obligations resulting from cash flows related to variable annuities have also been classified as other reinsurance balance assets and/or liabilities. Other

reinsurance assets are included in premiums receivable and other reinsurance balances while other reinsurance liabilities are included in other reinsurance balances on the consolidated balance sheets.

Goodwill and Value of Business Acquired

Goodwill, reported in other assets, is not amortized into results of operations, but instead is reviewed at least annually for impairment and written down only in the periods in which the recorded value of goodwill exceeds its fair value. Goodwill as of December 31, 2016 and 2015 totaled \$7.0 million. The value of business acquired (“VOBA”) is amortized in proportion to the ratio of annual premium revenues to total anticipated premium revenues or in relation to the present value of estimated profits. Anticipated premium revenues have been estimated using assumptions consistent with those used in estimating reserves for future policy benefits. The carrying value is reviewed at least annually for indicators of impairment in value. The VOBA was approximately \$3.1 million and \$3.7 million, including accumulated amortization of \$14.3 million and \$13.8 million, as of December 31, 2016 and 2015, respectively. The VOBA amortization expense for the years ended December 31, 2016, 2015 and 2014 was \$0.5 million, \$0.4 million, and \$0.4 million, respectively. These amortized balances are included in other assets on the consolidated balance sheets. Future amortization of the VOBA is not material.

Value of Distribution Agreements and Customer Relationships Acquired

Value of distribution agreements (“VODA”) is reported in other assets and represents the present value of future profits associated with the expected future business derived from the distribution agreements. Value of customer relationships acquired (“VOCRA”) is also reported in other assets and represents the present value of the expected future profits associated with the expected future business acquired through existing customers of the acquired company or business. The VODA is amortized over a useful life of 15 years and the VOCRA is also amortized over a 15 year period in proportion to expected revenues generated. Such amortization is included in policy acquisition costs and other insurance expenses for reinsurance-related acquisitions or other operating expenses for other acquisitions. Each year the Company reviews VODA and VOCRA to determine the recoverability of these balances. VODA and VOCRA totaled approximately \$61.2 million and \$70.5 million, including accumulated amortization of \$63.2 million and \$53.9 million, as of December 31, 2016 and 2015, respectively. The VODA and VOCRA amortization expense for the years ended December 31, 2016, 2015 and 2014 was \$9.3 million, \$9.5 million and \$9.5 million, respectively. Amortization of the VODA and VOCRA is estimated to be \$8.9 million, \$8.6 million, \$8.3 million, \$7.8 million and \$6.9 million during 2017, 2018, 2019, 2020 and 2021, respectively.

Property, Equipment, Leasehold Improvements and Computer Software

Property, equipment and leasehold improvements, which are included in other assets, are stated at cost, less accumulated depreciation and amortization. Depreciation and amortization is determined using the straight-line method over the estimated useful lives of the assets, as appropriate. The estimated life is generally 40 years for company occupied real estate property, from one to seven years for leasehold improvements, and from three to seven years for all other property and equipment. The cost basis of the property, equipment and leasehold improvements was \$221.7 million and \$219.6 million at December 31, 2016 and 2015, respectively. Accumulated depreciation and amortization of property, equipment and leasehold improvements was \$60.8 million and \$49.0 million at December 31, 2016 and 2015, respectively. Related depreciation and amortization expense was \$16.6 million, \$17.1 million and \$9.4 million for the years ended December 31, 2016, 2015 and 2014, respectively.

The Company had assets acquired under capital leases, included in the total above, of \$145.7 million and \$156.1 million, net of accumulated amortization of \$21.0 million and \$11.4 million as of December 31, 2016 and 2015, respectively. Amortization on assets under capital leases charged to expense is included in other operating expenses. Amortization expense for the years ended December 31, 2016 and 2015 was \$9.6 million and \$10.0 million, respectively.

Computer software, which is included in other assets, is stated at cost, less accumulated amortization. Purchased software costs, as well as certain internal and external costs incurred to develop internal-use computer software during the application development stage, are capitalized. Amortization of software costs is recorded on a straight-line basis over periods ranging from three to ten years. Carrying values are reviewed periodically for indicators of impairment in value. Unamortized computer software costs were \$139.8 million and \$100.8 million at December 31, 2016 and 2015, respectively. The increase in unamortized software costs in 2016 was primarily related to the development or acquisition of software for internal use in connection with the Company’s information technology and infrastructure initiatives. Amortization expense was \$10.3 million, \$14.0 million, and \$5.9 million for the years ended December 31, 2016, 2015 and 2014, respectively. The amortization in 2016 and 2015 includes asset impairment charges of \$0.6 million and \$6.0 million, respectively.

Operating Joint Ventures

The Company has made investments in certain joint ventures that are strategic in nature and made other than for the sole purpose of generating investment income. These investments are reported under the equity method of accounting and are included in other assets on the consolidated balance sheets. The Company’s share of earnings from these joint ventures is reported in other revenues

on the consolidated statements of income. The Company's investments in operating joint ventures do not have a material effect on the Company's results of operations and financial condition, and as a result no additional disclosures have been presented.

Future Policy Benefits

Liabilities for future benefits on life policies are established in an amount adequate to meet the estimated future obligations on policies in force. Liabilities for future policy benefits under long-term life insurance policies have been computed based upon expected investment yields, mortality and withdrawal (lapse) rates, and other assumptions. These assumptions include a margin for adverse deviation and vary with the characteristics of the plan of insurance, year of issue, age of insured, and other appropriate factors. Interest rates range from 3.0% to 6.0%. The mortality and withdrawal assumptions are based on the Company's experience as well as industry experience and standards. In establishing reserves for future policy benefits, the Company assigns policy liability assumptions to particular timeframes (eras) in such a manner as to be consistent with the underlying assumptions and economic conditions at the time the risks are assumed. The Company maintains a consistent approach to setting the provision for adverse deviation between eras.

Liabilities for future benefits on longevity business, including annuities in the payout phase, are established in an amount adequate to meet the estimated future obligations on policies in force. Liabilities for future benefits related to the longevity business, including annuities in the payout phase have been calculated using expected mortality, investment yields, and other assumptions. These assumptions include a margin for adverse deviation and vary with the characteristics of the plan of insurance, year of issue, age of insured, and other appropriate factors. The mortality assumptions are based on the Company's experience as well as industry experience and standards. A deferred profit liability is established when the gross premium exceeds the net premium.

The Company periodically reviews actual and anticipated experience compared to the assumptions used to establish policy benefits. The Company establishes premium deficiency reserves if actual and anticipated experience indicates that existing policy liabilities together with the present value of future gross premiums will not be sufficient to cover the present value of future benefits, settlement and maintenance costs and to recover unamortized acquisition costs. Anticipated investment income is considered in the calculation of premium deficiency losses for short duration contracts. The premium deficiency reserve is established by a charge to income, as well as a reduction in unamortized acquisition costs and, to the extent there are no unamortized acquisition costs, an increase in future policy benefits.

The reserving process includes normal periodic reviews of assumptions used and adjustments of reserves to incorporate the refinement of the assumptions. Any such adjustments relate only to policies assumed in recent periods and the adjustments are reflected by a cumulative charge or credit to current operations.

The Company reinsures disability products in various markets. Liabilities for future benefits on disability policies' active lives are established in an amount adequate to meet the estimated future obligations on policies in force. These reserves are the amounts which, with the additional premiums to be received and interest thereon compounded annually at certain assumed rates, are calculated to be sufficient to meet the various policy and contract obligations as they mature.

The Company establishes future policy benefits for guaranteed minimum death benefits ("GMDB") relating to the reinsurance of certain variable annuity contracts by estimating the expected value of death benefits in excess of the projected account balance and recognizing the excess proportionally over the accumulation period based on total expected assessments. The Company regularly evaluates estimates used and adjusts the additional liability balance, with a related charge or credit to claims and other policy benefits, if actual experience or other evidence suggests that earlier assumptions should be revised. The assumptions used in estimating the GMDB liabilities are consistent with those used for amortizing DAC, and are thus subject to the same variability and risk. The Company's GMDB liabilities at December 31, 2016 and 2015 were not material.

Interest-Sensitive Contract Liabilities

Liabilities for future benefits on interest-sensitive life and investment-type contract liabilities are carried at the accumulated contract holder values without reduction for potential surrender or withdrawal charges. The Company reinsures asset-intensive products, including annuities and corporate-owned life insurance. The investment portfolios for these products are segregated for management purposes within the general account of RGA Reinsurance Company ("RGA Reinsurance"). The liabilities under asset-intensive insurance contracts or reinsurance contracts reinsured on a coinsurance basis are included in interest-sensitive contract liabilities on the consolidated balance sheets. Asset-intensive contracts principally include individual fixed annuities in the accumulation phase, single premium immediate annuities, equity-indexed annuities, individual variable annuities, corporate-owned life and interest-sensitive whole life insurance contracts. Interest-sensitive contract liabilities are equal to (i) policy account values, which consist of an accumulation of gross premium payments; (ii) credited interest less expenses, mortality charges, and withdrawals; and (iii) fair value adjustments relating to business combinations. Liabilities for immediate annuities are calculated as the present value of the expected cash flows, with the locked-in discount rate determined such that there is no gain or loss at inception. Additionally, certain annuity contracts the Company reinsures contain terms, such as guaranteed minimum benefits and equity participation options, which are deemed to be embedded derivatives and are accounted for based on the general accounting principles for *Derivatives and Hedging*.

The Company establishes liabilities for guaranteed minimum living benefits relating to certain variable annuity products as follows:

Guaranteed minimum income benefits (“GMIB”) provide the contract holder, after a specified period of time determined at the time of issuance of the variable annuity contract, with a minimum level of income (annuity) payments. Under the reinsurance treaty, the Company makes a payment to the ceding company equal to the GMIB net amount-at-risk at the time of annuitization and thus these contracts meet the net settlement criteria of the general accounting principles for *Derivatives and Hedging* and the Company assumes no mortality risk. Accordingly, the GMIB is considered an embedded derivative, which is measured at fair value separately from the host variable annuity product.

Guaranteed minimum withdrawal benefits (“GMWB”) guarantee the contract holder a return of their purchase payment via partial withdrawals, even if the account value is reduced to zero, provided that the contract holder’s cumulative withdrawals in a contract year do not exceed a certain limit. The initial guaranteed withdrawal amount is equal to the initial benefit base as defined in the contract (typically, the initial purchase payments plus applicable bonus amounts). The GMWB is also an embedded derivative, which is measured at fair value separately from the host variable annuity product.

Guaranteed minimum accumulation benefits (“GMAB”) provide the contract holder, after a specified period of time determined at the time of issuance of the variable annuity contract, with a minimum accumulation of their purchase payments even if the account value is reduced to zero. The initial guaranteed accumulation amount is equal to the initial benefit base as defined in the contract (typically, the initial purchase payments plus applicable bonus amounts). The GMAB is also an embedded derivative, which is measured at fair value separately from the host variable annuity product.

For GMIB, GMWB and GMAB, the initial benefit base is increased by additional purchase payments made within a certain time period and decreased by benefits paid and/or withdrawal amounts. After a specified period of time, the benefit base may also increase as a result of an optional reset as defined in the contract.

The fair values of the GMIB, GMWB and GMAB embedded derivative liabilities are reflected in interest-sensitive contract liabilities on the consolidated balance sheets and are calculated based on actuarial and capital market assumptions related to the projected cash flows, including benefits and related contract charges over the lives of the contracts. These projected cash flows incorporate expectations concerning policyholder behavior, such as lapses, withdrawals and benefit selections, and capital market assumptions such as interest rates and equity market volatilities. In measuring the fair value of GMIBs, GMWBs and GMABs, the Company attributes a portion of the fees collected from the policyholder equal to the present value of expected future guaranteed minimum income, withdrawal and accumulation benefits (at inception). The changes in fair value are reported in investment related gains (losses), net. Any additional fees represent “excess” fees and are reported in other revenues on the consolidated statements of income. These variable annuity guaranteed living benefits may be more costly than expected in volatile or declining equity markets or falling interest rate markets, causing an increase in interest-sensitive contract liabilities, negatively affecting net income.

The Company reinsures equity-indexed annuity contracts. These contracts allow the contract holder to elect an interest rate return or an equity market component where interest credited is based on the performance of common stock market indices, such as the S&P 500 Index®, the Dow Jones Industrial Average, or the NASDAQ. The equity market option is considered an embedded derivative, similar to a call option, which is reflected at fair value on the consolidated balance sheets in interest-sensitive contract liabilities. The fair value of embedded derivatives is computed based on a projection of future equity option costs using a budget methodology, discounted back to the balance sheet date using current market indicators of volatility and interest rates. Changes in the fair value of the embedded derivatives are included as a component of interest credited on the consolidated statements of income.

The Company reviews its estimates of actuarial liabilities for interest-sensitive contract liabilities and compares them with its actual experience. Differences between actual experience and the assumptions used in pricing these guarantees and benefits and in the establishment of the related liabilities result in variances in profit and could result in losses. The effects of changes in such estimated liabilities are included in the results of operations in the period in which the changes occur.

Other Policy Claims and Benefits

Claims payable for incurred but not reported losses are determined using case-basis estimates and lag studies of past experience. The time lag from the date of the claim or death to when the ceding company reports the claim to the Company can vary significantly by ceding company, business segment and product type, but generally averages around 3.4 months. Incurred but not reported claims are estimates on an undiscounted basis, using actuarial estimates of historical claims expense, adjusted for current trends and conditions. These estimates are continually reviewed and the ultimate liability may vary significantly from the amount recognized, which are reflected in claims and other policy benefits in the consolidated statements of income in the period in which they are determined.

Other Liabilities

Other liabilities primarily include investments in transit, separate accounts, employee benefits, cash collateral received on derivative positions and current federal income taxes payable.

Income Taxes

The U.S. consolidated tax return includes the operations of RGA and all eligible subsidiaries. Aurora National Life Assurance Company's ("Aurora National") files a separate U.S. income tax return as it is ineligible for inclusion in the consolidated federal tax return until 2021. The Company's foreign subsidiaries are taxed under applicable local statutes.

The Company provides for federal, state and foreign income taxes currently payable, as well as those deferred due to temporary differences between the financial reporting and tax bases of assets and liabilities and are recognized in net income or in certain cases in OCI. The Company's accounting for income taxes represents management's best estimate of various events and transactions considering the laws enacted as of the reporting date.

Deferred tax assets and liabilities resulting from temporary differences between the financial reporting and tax bases of assets and liabilities are measured at the balance sheet date using enacted tax rates in the relevant jurisdictions expected to apply to taxable income in the years the temporary differences are expected to reverse.

The realization of deferred tax assets depends upon the existence of sufficient taxable income within the carryback or carryforward periods under the tax law in the applicable tax jurisdiction. The Company has deferred tax assets related to net operating and capital losses. The Company has projected its ability to utilize its U.S. and foreign net operating losses and has determined that all of the U.S. losses are expected to be utilized prior to their expiration and established a valuation allowance on the portion of the foreign deferred tax assets the Company believes more likely than not that deferred income tax assets will not be realized.

The Company will establish a valuation allowance if management determines, based on available information, that it is more likely than not that deferred income tax assets will not be realized. Significant judgment is required in determining whether valuation allowances should be established as well as the amount of such allowances. When making such a determination, consideration is given to, among other things, the following:

- (i) future taxable income exclusive of reversing temporary differences and carryforwards;
- (ii) future reversals of existing taxable temporary differences;
- (iii) taxable income in prior carryback years; and
- (iv) tax planning strategies.

Any such changes could significantly affect the amounts reported in the consolidated financial statements in the year these changes occur. The Company reports its total liability for uncertain tax positions considering the recognition and measurement thresholds established in general accounting principles for income taxes. The tax effects of a position are recognized in the consolidated statement of income only if it is more likely than not to be sustained upon examination by the appropriate taxing authority. Unrecognized tax benefits due to tax uncertainties that do not meet the more likely than not criteria are included within other liabilities and are charged to earnings in the period that such determination is made. The Company classifies interest related to tax uncertainties as interest expense whereas penalties related to tax uncertainties are classified as a component of income tax.

Collateral Finance and Securitization Notes

Collateral finance and securitization notes represent private placement asset-backed structured financing transactions. Collateral finance notes are issued on specified insurance policies reinsured by the Company's regulated subsidiaries. Transaction costs, primarily interest expense, are reflected in collateral finance and securitization expense. See Note 14 - "Collateral Finance and Securitization Notes" for additional information.

Foreign Currency Translation

The translation of the foreign currency into U.S. dollars is performed for balance sheet accounts using current exchange rates in effect at the balance sheet date and for revenue and expense accounts using weighted-average exchange rates during each year. Gains or losses, net of applicable deferred income taxes, resulting from such translation are included in accumulated currency translation adjustments, in AOCI on the consolidated balance sheets until the underlying functional currency operation is sold or substantially liquidated. The Company's material functional currencies are the U.S. dollar, Canadian dollar, British pound, Australian dollar, Japanese yen, Korean won, Euro and South African rand.

Recognition of Revenues and Related Expenses

Life and health premiums are recognized as revenue when due from the insured, and are reported net of amounts retroceded. Benefits and expenses are reported net of amounts retroceded and are associated with earned premiums so that profits are recognized over the life of the related contract. This association is accomplished through the provision for future policy benefits and the amortization of deferred policy acquisition costs. Other revenue includes items such as treaty recapture fees, fees associated with financial reinsurance and policy changes on interest-sensitive and investment-type products that the Company reinsures. Any fees that are collected in advance of the period benefited are deferred and recognized over the period benefited.

For certain reinsurance transactions involving in force blocks of business, the ceding company pays a premium equal to the initial required reserve (future policy benefit). In such transactions, for income statement presentation, the Company nets the expense associated with the establishment of the reserve on the consolidated balance sheets against the premiums from the transaction.

Revenues for interest-sensitive and investment-type products consist of investment income, policy charges for the cost of insurance, policy administration, and surrenders that have been assessed against policy account balances during the period. Interest-sensitive contract liabilities for these products represent policy account balances before applicable surrender charges. Policy benefits and claims that are charged to expenses include claims incurred in the period in excess of related policy account balances and interest credited to policy account balances. Interest is credited to policyholder account balances according to terms of the policies or contracts.

For each of its reinsurance contracts, the Company must determine if the contract provides indemnification against loss or liability relating to insurance risk, in accordance with GAAP. The Company must review all contractual features, particularly those that may limit the amount of insurance risk to which the Company is subject or features that delay the timely reimbursement of claims. If the Company determines that a contract does not expose it to a reasonable possibility of a significant loss from insurance risk, the Company records the contract on a deposit method of accounting with any net amount receivable reflected as an asset within premiums receivable and other reinsurance balances, and any net amount payable reflected as a liability within other reinsurance balances on the consolidated balance sheets. Fees earned on the contracts are reflected as other revenues, rather than premiums, on the consolidated statements of income.

Equity Based Compensation

The Company expenses the fair value of stock awards included in its incentive compensation plans. As of the date stock awards are approved, the fair value of stock options is determined using a Black-Scholes options valuation methodology, and the fair value of other stock awards is based upon the market value of the stock. The fair value of the awards is expensed over the performance or service period, which generally corresponds to the vesting period, and is recognized as an increase to additional paid-in-capital in stockholders' equity. Stock-based compensation expense is reflected in other operating expenses in the consolidated statements of income.

Earnings Per Share

Basic earnings per share exclude any dilutive effects of any outstanding options. Diluted earnings per share include the dilutive effects assuming outstanding stock options were exercised.

New Accounting Pronouncements

Changes to the general accounting principles are established by the Financial Accounting Standards Board ("FASB") in the form of accounting standards updates to the FASB Accounting Standards CodificationTM. Accounting standards updates not listed below were assessed and determined to be either not applicable or are expected to have minimal impact on the Company's consolidated financial statements.

Adoption of New Accounting Standards

Debt Issuance Costs

In April 2015, the FASB issued accounting guidance, "Simplifying the Presentation of Debt Issuance Costs" which requires capitalized debt issuance costs related to a recognized debt liability be presented in the statement of financial position as a direct deduction from the carrying amount of that debt. This standard is effective for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2015, with early adoption permitted for financial statements not yet issued. The Company adopted this standard as of December 31, 2015. Adoption of the guidance did not have a material impact on the Company's financial statements.

Financial Services - Insurance

In May 2015, the FASB amended the general accounting principle for Financial Services - Insurance which expanded the breadth of disclosures that an insurance entity must provide about its short-duration insurance contracts. This update requires insurance entities to disclose for annual reporting periods information about the liability for unpaid claims and claim adjustment expenses. The update also requires insurance entities to disclose information about significant changes in methodologies and assumptions used to calculate the liability for unpaid claims and claim adjustment expenses, including reasons for the change and the effects on the financial statements. This amendment focuses only on disclosure; it does not change the accounting model for short-duration contracts. The update is effective for annual periods beginning after December 15, 2015, and interim periods within annual periods beginning after December 15, 2016. The Company adopted the guidance for the year ended December 31, 2016 and applied the guidance prospectively. The adoption of this update did not have an impact on the Company's consolidated

financial statements other than the addition of the required disclosures, and the required disclosures are provided in Note 16 - “Short-Duration Contracts”.

Future Adoption of New Accounting Standards

Financial Instruments

In January 2016, the FASB amended the general accounting principle for Financial Instruments, effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2017. The amendment revises the accounting related to (1) the classification and measurement of investments in equity securities, (2) the presentation of certain fair value changes for financial liabilities measured at fair value, (3) certain disclosure requirements associated with the fair value of financial instruments. The new guidance should be applied by means of a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. The amendments related to equity securities without readily determinable fair values (including disclosure requirements) should be applied prospectively to equity investments that exist as of the date of adoption. The Company is currently evaluating the impact of this amendment on its consolidated financial statements.

In June 2016, the FASB amended the existing impairment guidance of *Financial Instruments*. The amendment adds to U.S. GAAP an impairment model, known as current expected credit loss (“CECL”) model that is based on expected losses rather than incurred losses. For traditional and other receivables, held-to-maturity debt securities, loans and other instruments entities will be required to use the new forward-looking “expected loss” model that generally will result in earlier recognition of allowance for losses. For available-for-sale debt securities with unrealized losses, entities will measure credit losses similar to what they do today, except the losses will be recognized as allowances rather than reduction to the amortized cost of the securities. This guidance is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2019, with early adoption permitted. The guidance will be adopted through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective (that is, a modified-retrospective approach). The Company is currently evaluating the impact of this amendment on its consolidated financial statements.

Leases

In February 2016, the FASB issued guidance which will replace most existing lease accounting guidance. The new standard, based on the principle that entities should recognize assets and liabilities arising from leases, does not significantly change the lessees’ recognition, measurement and presentation of expenses and cash flows from the previous accounting standard. The new standard’s primary change is the requirement for entities to recognize a lease liability for payments and a right of use asset representing the right to use the leased asset during the term of operating lease arrangements. Lessees are permitted to make an accounting policy election to not recognize the asset and liability for leases with a term of twelve months or less. Lessors’ accounting is largely unchanged from the previous accounting standard. In addition, the new standard expands the disclosure requirements of lease arrangements. Lessees and lessors will use a modified retrospective transition approach, which includes a number of practical expedients. This guidance is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2018, with early adoption permitted. The Company is currently evaluating the impact of this amendment on its consolidated financial statements.

Stock Compensation

In March 2016, the FASB updated the general accounting principal for Stock Compensation which changes how companies account for certain aspects of share-based payment awards to employees. The updated guidance requires excess tax benefits and deficiencies from share-based payment awards be recorded in income tax expense in the income statement. Currently, excess tax benefits and deficiencies are recognized in shareholders’ equity or deferred taxes on the balance sheet depending on the tax situation of the company. In addition, the updated guidance also changes the accounting for forfeitures and statutory tax withholding requirements, as well as the classification in the statement of cash flows. This update is effective for annual and interim periods beginning after December 15, 2016. This guidance will be applied either prospectively, retrospectively or using a modified retrospective transition method, depending on the area covered in this update. The adoption of this guidance could have a more than inconsequential effect on the Company’s financial statements. For example, if the Company had adopted this updated guidance in fiscal year 2016, its income tax expense for the year would have been reduced by approximately \$5.4 million. The adoption of this guidance is also expected to result in increased volatility to the Company’s income tax expense in future periods dependent upon, the price of its common stock, and the timing and volume of share-based payment activity, such as employee exercises of stock options and the vesting of restricted stock awards. The Company will not elect an accounting policy change to record forfeitures as they occur and will continue to estimate forfeitures in each period.

Income Taxes

In October 2016, the FASB amended the general accounting principal for Income Taxes, effective for annual and interim periods beginning after December 15, 2017. The amendment requires entities to recognize the tax consequences of intercompany asset

transfers, except for inventory, at the transaction date. Current U.S. GAAP prohibits entities from recognizing the income tax consequences from intercompany asset transfers. The seller defers any net tax effect, and the buyer is prohibited from recognizing a deferred tax asset on the difference between the newly created tax basis of the asset in its tax jurisdiction and its financial statement carrying amount as reported in the consolidated financial statements. The amendment requires entities to recognize these tax consequences in the period in which the transfer occurred. There will be an immediate effect on earnings if the tax rates in the seller's and buyer's tax jurisdictions are different. This amendment will be applied using a modified retrospective transition method with a cumulative effect adjustment to retained earnings as of the beginning of the period of adoption. The Company is currently evaluating the impact of this amendment on its consolidated financial statements.

Note 3 ACQUISITIONS

In April 2015, the Company completed the acquisition of 100% of Aurora National stock from Swiss Re Life & Health America, Inc. ("Swiss Re") pursuant to the stock purchase agreement dated October 20, 2014, between the Company and Swiss Re. The transaction represented an opportunity to deploy capital into a seasoned closed block of business in the U.S. market. The total cash purchase price was \$191.5 million, net of cash acquired. Total assets acquired were \$3.7 billion, primarily consisting of \$3.6 billion of investments, and total liabilities assumed were \$3.5 billion. There is no goodwill, including tax deductible goodwill, associated with the acquisition. The business acquired is reflected in the U.S. and Latin America Traditional and Financial Solutions segments. This acquisition did not have a material impact on the Company's consolidated financial statements, and as a result no proforma disclosures have been presented.

In October 2015, the Company completed the acquisition of the life insurance portfolio of PGGM Levensverzekeringen, N.V. ("PGGM"), a Netherlands-based cooperative. This transaction supports the Company's objective to capitalize on the realignment of the financial services industry and provide closed-block solutions in the European market. Total assets acquired were \$404.4 million, primarily consisting of \$395.6 million of investments, and total liabilities assumed were \$394.1 million. There is no goodwill, including tax deductible goodwill, associated with the acquisition. The acquisition is reflected in the Company's Europe, Middle East and Africa traditional and financial solutions segments. This acquisition did not have a material impact on the Company's consolidated financial statements, and as a result no proforma disclosures have been presented.

Note 4 INVESTMENTS

Fixed Maturity and Equity Securities Available-for-Sale

The following tables provide information relating to investments in fixed maturity and equity securities by sector as of December 31, 2016 and 2015 (dollars in thousands):

December 31, 2016:	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value	% of Total	Other-than- temporary impairments in AOCI
Available-for-sale:						
Corporate securities	\$ 18,924,711	\$ 911,618	\$ 217,245	\$ 19,619,084	61.1%	\$ —
Canadian and Canadian provincial governments	2,561,605	1,085,982	3,541	3,644,046	11.4	—
Residential mortgage-backed securities	1,258,039	33,917	13,380	1,278,576	4.0	(375)
Asset-backed securities	1,443,822	9,350	23,828	1,429,344	4.5	275
Commercial mortgage-backed securities	1,342,440	28,973	7,759	1,363,654	4.2	—
U.S. government and agencies	1,518,702	12,644	63,044	1,468,302	4.6	—
State and political subdivisions	566,761	37,499	12,464	591,796	1.8	—
Other foreign government, supranational and foreign government-sponsored enterprises	2,595,707	123,054	19,938	2,698,823	8.4	—
Total fixed maturity securities	\$ 30,211,787	\$ 2,243,037	\$ 361,199	\$ 32,093,625	100.0%	\$ (100)
Non-redeemable preferred stock	\$ 55,812	\$ 1,648	\$ 6,337	\$ 51,123	18.6%	—
Other equity securities	229,767	1,792	7,321	224,238	81.4	—
Total equity securities	\$ 285,579	\$ 3,440	\$ 13,658	\$ 275,361	100.0%	—

December 31, 2015:	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value	% of Total	Other-than- temporary impairments in AOCI
Available-for-sale:						
Corporate securities	\$ 17,575,507	\$ 599,718	\$ 467,069	\$ 17,708,156	59.7%	\$ —
Canadian and Canadian provincial governments	2,469,009	1,110,282	2,532	3,576,759	12.1	—
Residential mortgage-backed securities	1,277,998	45,152	11,673	1,311,477	4.4	(300)
Asset-backed securities	1,219,000	12,052	18,376	1,212,676	4.1	354
Commercial mortgage-backed securities	1,456,848	37,407	11,168	1,483,087	5.0	(1,609)
U.S. government and agencies	1,423,791	15,586	57,718	1,381,659	4.7	—
State and political subdivisions	480,067	40,014	9,067	511,014	1.7	—
Other foreign government, supranational and foreign government-sponsored enterprises	2,420,757	78,964	41,644	2,458,077	8.3	—
Total fixed maturity securities	\$ 28,322,977	\$ 1,939,175	\$ 619,247	\$ 29,642,905	100.0%	\$ (1,555)
Non-redeemable preferred stock	\$ 85,645	\$ 7,837	\$ 5,962	\$ 87,520	69.5%	
Other equity securities	40,584	—	2,242	38,342	30.5	
Total equity securities	\$ 126,229	\$ 7,837	\$ 8,204	\$ 125,862	100.0%	

The Company enters into various collateral arrangements with counterparties that require both the pledging and acceptance of fixed maturity securities as collateral. Pledged fixed maturity securities are included in fixed maturity securities, available-for-sale in the consolidated balance sheets. Fixed maturity securities received as collateral are held in separate custodial accounts and are not recorded on the Company's consolidated balance sheets. Subject to certain constraints, the Company is permitted by contract to sell or repledge collateral it receives; however, as of December 31, 2016 and 2015, none of the collateral received had been sold or repledged. The Company also holds assets in trust to satisfy collateral requirements under certain third-party reinsurance treaties. The following table includes fixed maturity securities pledged and received as collateral and assets in trust held to satisfy collateral requirements under derivative transactions and certain third-party reinsurance treaties as of December 31, 2016 and 2015 (dollars in thousands):

	2016		2015	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Fixed maturity securities pledged as collateral	\$ 207,066	\$ 210,676	\$ 169,678	\$ 176,782
Fixed maturity securities received as collateral	n/a	300,925	n/a	242,914
Assets in trust held to satisfy collateral requirements	12,135,258	12,874,370	10,535,729	10,928,393

The Company monitors its concentrations of financial instruments on an ongoing basis, and mitigates credit risk by maintaining a diversified investment portfolio which limits exposure to any one issuer. The Company's exposure to concentrations of credit risk from single issuers greater than 10% of the Company's stockholders' equity included securities of the U.S. government and its agencies, as well as the securities disclosed below, as of December 31, 2016 and 2015 (dollars in thousands).

	2016		2015	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Fixed maturity securities guaranteed or issued by:				
Canadian province of Quebec	\$ 1,004,261	\$ 1,612,957	\$ 943,484	\$ 1,525,903
Canadian province of Ontario	832,764	1,126,433	864,444	1,199,080

The amortized cost and estimated fair value of fixed maturity securities available-for-sale at December 31, 2016 are shown by contractual maturity in the table below (dollars in thousands). Actual maturities can differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties. Asset and mortgage-backed securities are shown separately in the table below, as they are not due at a single maturity date.

	Amortized Cost	Estimated Fair Value
Available-for-sale:		
Due in one year or less	\$ 791,302	\$ 800,010
Due after one year through five years	6,665,056	6,897,024
Due after five years through ten years	9,042,167	9,390,938
Due after ten years	9,668,961	10,934,079
Asset and mortgage-backed securities	4,044,301	4,071,574
Total	\$ 30,211,787	\$ 32,093,625

Corporate Fixed Maturity Securities

The tables below show the major industry types of the Company's corporate fixed maturity holdings as of December 31, 2016 and 2015 (dollars in thousands):

December 31, 2016:

	Amortized Cost	Estimated Fair Value	% of Total
Finance	\$ 6,725,199	\$ 6,888,968	35.2%
Industrial	10,228,813	10,639,613	54.2
Utility	1,970,699	2,090,503	10.6
Total	\$ 18,924,711	\$ 19,619,084	100.0%

December 31, 2015:

	Amortized Cost	Estimated Fair Value	% of Total
Finance	\$ 5,408,791	\$ 5,555,044	31.4%
Industrial	10,211,426	10,129,917	57.2
Utility	1,955,290	2,023,195	11.4
Total	\$ 17,575,507	\$ 17,708,156	100.0%

Other-Than-Temporary Impairments—Fixed Maturity and Equity Securities

As discussed in Note 2 – “Summary of Significant Accounting Policies,” a portion of certain other-than-temporary impairment (“OTTI”) losses on fixed maturity securities is recognized in AOCI. For these securities, the net amount recognized in the consolidated statements of income (“credit loss impairments”) represents the difference between the amortized cost of the security and the net present value of its projected future cash flows discounted at the effective interest rate implicit in the debt security prior to impairment. Any remaining difference between the fair value and amortized cost is recognized in AOCI. The following table sets forth the amount of pre-tax credit loss impairments on fixed maturity securities held by the Company as of the dates indicated, for which a portion of the OTTI loss was recognized in AOCI, and the corresponding changes in such amounts (dollars in thousands):

	2016	2015	2014
Balance, beginning of period	\$ 7,284	\$ 7,284	\$ 11,696
Additional impairments - credit loss OTTI recognized on securities previously impaired	231	—	—
Credit loss previously recognized on securities which matured, paid down, prepaid or were sold during the period	(1,502)	—	(4,412)
Balance, end of period	\$ 6,013	\$ 7,284	\$ 7,284

Purchased Credit Impaired Fixed Maturity Securities Available-for-Sale

Securities acquired with evidence of credit quality deterioration since origination and for which it is probable at the acquisition date that the Company will be unable to collect all contractually required payments are classified as purchased credit impaired securities. For each security, the excess of the cash flows expected to be collected as of the acquisition date over its acquisition date fair value is referred to as the accretable yield and is recognized as net investment income on an effective yield basis. At the date of acquisition, the timing and amount of the cash flows expected to be collected was determined based on a best estimate using key assumptions, such as interest rates, default rates and prepayment speeds. If subsequently, based on current information and events, it is probable that there is a significant increase in cash flows previously expected to be collected or if actual cash flows are significantly greater than cash flows previously expected to be collected, the accretable yield is adjusted prospectively. The excess of the contractually required payments (including interest) as of the acquisition date over the cash flows expected to be collected as of the acquisition date is referred to as the nonaccretable difference, and this amount is not expected to be realized as net investment income. Decreases in cash flows expected to be collected can result in OTTI.

The following tables present information on the Company's purchased credit impaired securities, which are included in fixed maturity securities available-for-sale as of December 31, 2016 and 2015 (dollars in thousands):

	2016	2015
Outstanding principal and interest balance ⁽¹⁾	\$ 85,078	\$ 343,640
Carrying value, including accrued interest ⁽²⁾	\$ 69,717	\$ 287,663

(1) Represents the contractually required payments which is the sum of contractual principal, whether or not currently due, and accrued interest.

(2) Estimated fair value plus accrued interest.

The following table presents information about purchased credit impaired investments acquired during the periods ended December 31, 2016 and 2015, as of the acquisition dates (dollars in thousands):

	2016	2015
Contractually required payments (including interest)	\$ 7,310	\$ 217,187
Cash flows expected to be collected ⁽¹⁾	\$ 5,748	\$ 179,025
Fair value of investments acquired	\$ 4,139	\$ 137,399

(1) Represents undiscounted principal and interest cash flow expectations at the date of acquisition.

The following table presents activity for the accretable yield on purchased credit impaired securities for the years ended December 31, 2016 and 2015 (dollars in thousands):

	2016	2015
Balance, beginning of period	\$ 88,016	\$ 67,171
Investments purchased	1,609	41,626
Accretion	(9,004)	(11,402)
Disposals	(59,078)	(1,109)
Reclassification from nonaccretable difference	(2,105)	(8,270)
Balance, end of period	\$ 19,438	\$ 88,016

Unrealized Losses for Fixed Maturity and Equity Securities Available-for-Sale

The following table presents the total gross unrealized losses for the 1,535 and 2,080 fixed maturity and equity securities at December 31, 2016 and 2015, respectively, where the estimated fair value had declined and remained below amortized cost by the indicated amount (dollars in thousands):

	2016		2015	
	Gross Unrealized Losses	% of Total	Gross Unrealized Losses	% of Total
Less than 20%	\$ 337,831	90.1%	\$ 463,109	73.8%
20% or more for less than six months	19,438	5.2	142,495	22.7
20% or more for six months or greater	17,588	4.7	21,847	3.5
Total	\$ 374,857	100.0%	\$ 627,451	100.0%

The Company's determination of whether a decline in value is other-than-temporary includes analysis of the underlying credit and the extent and duration of a decline in value. The Company's credit analysis of an investment includes determining whether the issuer is current on its contractual payments, evaluating whether it is probable that the Company will be able to collect all amounts due according to the contractual terms of the security and analyzing the overall ability of the Company to recover the amortized cost of the investment. In the Company's impairment review process, the duration and severity of an unrealized loss position for equity securities are given greater weight and consideration given the lack of contractual cash flows or deferability features.

The following tables present the estimated fair values and gross unrealized losses, including other-than-temporary impairment losses reported in AOCI, for 1,535 and 2,080 fixed maturity and equity securities that have estimated fair values below amortized cost as of December 31, 2016 and 2015, respectively (dollars in thousands). These investments are presented by class and grade of security, as well as the length of time the related fair value has remained below amortized cost.

	Less than 12 months		12 months or greater		Total	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
December 31, 2016:						
Investment grade securities:						
Corporate securities	\$ 4,661,706	\$ 124,444	\$ 549,273	\$ 43,282	\$ 5,210,979	\$ 167,726
Canadian and Canadian provincial governments	101,578	3,541	—	—	101,578	3,541
Residential mortgage-backed securities	490,473	9,733	112,216	3,635	602,689	13,368
Asset-backed securities	563,259	12,010	257,166	9,653	820,425	21,663
Commercial mortgage-backed securities	368,465	6,858	10,853	166	379,318	7,024
U.S. government and agencies	1,056,101	63,044	—	—	1,056,101	63,044
State and political subdivisions	187,194	9,396	13,635	3,068	200,829	12,464
Other foreign government, supranational and foreign government-sponsored enterprises	524,236	13,372	51,097	2,981	575,333	16,353
Total investment grade securities	7,953,012	242,398	994,240	62,785	8,947,252	305,183
Below investment grade securities:						
Corporate securities	330,757	7,914	163,152	41,605	493,909	49,519
Residential mortgage-backed securities	—	—	412	12	412	12
Asset-backed securities	5,904	700	12,581	1,465	18,485	2,165
Commercial mortgage-backed securities	5,815	735	—	—	5,815	735
Other foreign government, supranational and foreign government-sponsored enterprises	32,355	1,258	39,763	2,327	72,118	3,585
Total below investment grade securities	374,831	10,607	215,908	45,409	590,739	56,016
Total fixed maturity securities	\$ 8,327,843	\$ 253,005	\$ 1,210,148	\$ 108,194	\$ 9,537,991	\$ 361,199
Non-redeemable preferred stock	\$ 10,831	\$ 831	\$ 21,879	\$ 5,506	\$ 32,710	\$ 6,337
Other equity securities	202,068	7,020	6,751	301	208,819	7,321
Total equity securities	\$ 212,899	\$ 7,851	\$ 28,630	\$ 5,807	\$ 241,529	\$ 13,658

December 31, 2015:	Less than 12 months		12 months or greater		Total	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Investment grade securities:						
Corporate securities	\$ 6,388,148	\$ 323,961	\$ 294,755	\$ 40,861	\$ 6,682,903	\$ 364,822
Canadian and Canadian provincial governments	122,746	2,532	—	—	122,746	2,532
Residential mortgage-backed securities	452,297	7,036	82,314	4,057	534,611	11,093
Asset-backed securities	581,701	9,825	199,298	7,100	780,999	16,925
Commercial mortgage-backed securities	514,877	9,806	31,177	997	546,054	10,803
U.S. government and agencies	1,010,387	57,718	—	—	1,010,387	57,718
State and political subdivisions	157,837	5,349	13,016	3,718	170,853	9,067
Other foreign government, supranational and foreign government-sponsored enterprises	702,962	18,279	38,379	4,206	741,341	22,485
Total investment grade securities	9,930,955	434,506	658,939	60,939	10,589,894	495,445
Below investment grade securities:						
Corporate securities	554,688	71,171	114,427	31,076	669,115	102,247
Residential mortgage-backed securities	22,646	282	7,679	298	30,325	580
Asset-backed securities	6,772	201	9,335	1,250	16,107	1,451
Commercial mortgage-backed securities	3,253	248	767	117	4,020	365
Other foreign government, supranational and foreign government-sponsored enterprises	60,668	7,356	31,693	11,803	92,361	19,159
Total below investment grade securities	648,027	79,258	163,901	44,544	811,928	123,802
Total fixed maturity securities	\$ 10,578,982	\$ 513,764	\$ 822,840	\$ 105,483	\$ 11,401,822	\$ 619,247
Non-redeemable preferred stock	\$ 12,331	\$ 2,175	\$ 12,191	\$ 3,787	\$ 24,522	\$ 5,962
Other equity securities	38,327	2,242	—	—	38,327	2,242
Total equity securities	\$ 50,658	\$ 4,417	\$ 12,191	\$ 3,787	\$ 62,849	\$ 8,204

The Company has no intention to sell, nor does it expect to be required to sell, the securities outlined in the table above, as of the dates indicated. However, unforeseen facts and circumstances may cause the Company to sell fixed maturity and equity securities in the ordinary course of managing its portfolio to meet certain diversification, credit quality and liquidity guidelines.

Unrealized losses on below investment grade securities as of December 31, 2016 are primarily related to high-yield corporate and other foreign government, supranational and foreign government-sponsored enterprise securities. Changes in unrealized losses are primarily driven by changes in credit spreads and interest rates.

Investment Income, Net of Related Expenses

Major categories of investment income, net of related expenses consist of the following (dollars in thousands):

	2016	2015	2014
Fixed maturity securities available-for-sale	\$ 1,285,406	\$ 1,177,706	\$ 1,052,715
Mortgage loans on real estate	168,582	149,564	148,417
Policy loans	63,837	62,955	55,248
Funds withheld at interest	368,728	343,031	447,364
Short-term investments and cash and cash equivalents	8,051	7,574	8,955
Other	89,371	61,709	63,312
Investment income	1,983,975	1,802,539	1,776,011
Investment expense	(72,089)	(68,044)	(62,320)
Investment income, net of related expenses	\$ 1,911,886	\$ 1,734,495	\$ 1,713,691

Investment Related Gains (Losses), Net

Investment related gains (losses), net, consist of the following (dollars in thousands):

	2016	2015	2014
Fixed maturity and equity securities available for sale:			
Other-than-temporary impairment losses on fixed maturities	\$ (38,805)	\$ (57,380)	\$ (7,766)
Portion of loss recognized in accumulated other comprehensive income	74	—	—
Net other-than-temporary impairment losses on fixed maturity securities recognized in earnings	\$ (38,731)	\$ (57,380)	\$ (7,766)
Gain on investment activity	154,370	73,079	65,435
Loss on investment activity	(49,965)	(71,893)	(31,295)
Other impairment losses and change in mortgage loan provision	(11,006)	(6,953)	(5,315)
Derivatives and other, net	39,527	(101,603)	165,134
Total investment related gains (losses), net	\$ 94,195	\$ (164,750)	\$ 186,193

The other-than-temporary impairment losses on fixed maturity securities for 2016, 2015 and 2014 are primarily due to emerging market and high-yield debt exposures. The fluctuations in investment related gains (losses) for derivatives and other are primarily due to changes in the fair value of embedded derivatives related to modified coinsurance and funds withheld treaties, as a result of changes in interest rates, driven primarily by credit spreads.

At December 31, 2016 and 2015 the Company held non-income producing securities with amortized costs of \$35.4 million and \$116.0 million, and estimated fair values of \$47.3 million and \$123.0 million, respectively. Generally, securities are non-income producing when principal or interest is not paid primarily as a result of bankruptcies or credit defaults, but also include securities where amortization has been discontinued. During 2016, 2015 and 2014 the Company sold fixed maturity and equity securities with fair values of \$1,181.6 million, \$1,523.6 million, and \$1,016.5 million, which were below amortized cost, at gross realized losses of \$50.0 million, \$71.9 million and \$31.3 million, respectively. The Company generally does not engage in short-term buying and selling of securities.

Securities Borrowing, Lending and Other

The Company participates in securities borrowing programs whereby securities, which are not reflected on the Company's consolidated balance sheets, are borrowed from third parties. The borrowed securities are used to provide collateral under affiliated reinsurance transactions. The Company is required to maintain a minimum of 100% of the fair value, or par value under certain programs, of the borrowed securities as collateral. The collateral consists of rights to reinsurance treaty cash flows. If cash flows from the reinsurance treaties are insufficient to maintain the minimum collateral requirement, the Company may substitute cash or securities to meet the requirement. No cash or securities have been pledged by the Company for this purpose.

The Company also participates in a securities lending program whereby securities, reflected as investments on the Company's consolidated balance sheets, are loaned to a third party. The Company receives securities as collateral, in an amount equal to a minimum of 105% of the fair value of the securities lent. The securities received are not reflected on the Company's consolidated balance sheets.

The Company also participates in repurchase/reverse repurchase programs in which securities, reflected as investments on the Company's consolidated balance sheets, are pledged to third parties. In return, the Company receives securities from the third parties with an estimated fair value equal to a minimum of 100% of the securities pledged. The securities received are not reflected on the Company's consolidated balance sheets.

The Company also participates in a repurchase program in which securities, reflected as investments on the Company's consolidated balance sheets, are pledged to a third party. In return, the Company receives cash from the third party, which is reflected as a payable to a third party, included in other liabilities on the consolidated balance sheets. The Company is required to maintain a minimum collateral balance with a fair value of 102% of the cash received.

The following table includes the amount of borrowed securities, securities lent and securities collateral received as part of the securities lending program, repurchased/reverse repurchased securities pledged and received and cash received as of December 31, 2016 and 2015 (dollars in thousands).

	2016		2015	
	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Borrowed securities	\$ 263,820	\$ 279,186	\$ 259,540	\$ 266,297
Securities lending:				
Securities loaned	74,389	73,625	—	—
Securities received	n/a	80,000	n/a	—
Repurchase program/reverse repurchase program:				
Securities pledged	476,531	499,891	443,435	465,889
Securities received	n/a	515,200	n/a	481,197
Cash received	—	28,832	—	—

The following tables present information on the Company's securities lending and repurchase transactions as of December 31, 2016 and 2015, respectively (dollars in thousands). Collateral associated with certain borrowed securities is not included within the tables as the collateral pledged to each counterparty is the right to reinsurance treaty cash flows.

	December 31, 2016				
	Remaining Contractual Maturity of the Agreements				
	Overnight and Continuous	Up to 30 Days	30-90 Days	Greater than 90 Days	Total
Securities lending transaction:					
Corporate securities	\$ —	\$ —	\$ 4,017	\$ 69,608	\$ 73,625
Total	—	—	4,017	69,608	73,625
Repurchase transactions:					
Corporate securities	—	—	3,220	166,979	170,199
Residential mortgage-backed securities	—	—	—	92,546	92,546
U.S. government and agencies	—	—	—	216,000	216,000
Foreign government	—	—	—	19,900	19,900
Other	1,246	—	—	—	1,246
Total	1,246	—	3,220	495,425	499,891
Total transactions	\$ 1,246	\$ —	\$ 7,237	\$ 565,033	\$ 573,516

Gross amount of recognized liabilities for securities lending and repurchase transactions in preceding table	\$ 624,032
Amounts related to agreements not included in offsetting disclosure	\$ 50,516

	December 31, 2015				
	Remaining Contractual Maturity of the Agreements				
	Overnight and Continuous	Up to 30 Days	30-90 Days	Greater than 90 Days	Total
Repurchase transactions:					
Corporate securities	\$ —	\$ 2,951	\$ —	\$ 147,324	\$ 150,275
Residential mortgage-backed securities	—	—	—	97,639	97,639
U.S. government and agencies	—	—	—	199,431	199,431
Foreign government	—	—	—	3,358	3,358
Other	15,186	—	—	—	15,186
Total transactions	\$ 15,186	\$ 2,951	\$ —	\$ 447,752	\$ 465,889

Gross amount of recognized liabilities for repurchase transactions in preceding table	\$ 481,197
Amounts related to agreements not included in offsetting disclosure	\$ 15,308

The Company has elected to offset amounts recognized as receivables and payables resulting from the repurchase/reverse repurchase programs. After the effect of offsetting, the net amount presented on the consolidated balance sheets was a liability of \$5.5 million

and \$8.8 million as of December 31, 2016 and 2015, respectively. The Company also has a payable resulting from cash received associated with a repurchase agreement of \$28.8 million as of December 31, 2016. There were no repurchase agreement payables as of December 31, 2015. Amounts owed to and due from the counterparties may be settled in cash or offset, in accordance with the agreements.

Mortgage Loans on Real Estate

Mortgage loans represented approximately 8.4% and 7.5% of the Company's total investments as of December 31, 2016 and 2015, respectively. The Company makes mortgage loans on income producing properties that are geographically diversified, with the largest concentration being in the state of California, which represented 22.1% and 22.3% of mortgage loans on real estate as of December 31, 2016 and 2015, respectively. The distribution of mortgage loans by property type, gross of valuation allowances is as follows as of December 31, 2016 and 2015 (dollars in thousands):

Property type:	2016		2015	
	Recorded Investment	Percentage of Total	Recorded Investment	Percentage of Total
Office building	\$ 1,270,113	33.6%	\$ 980,858	31.3%
Retail	1,179,936	31.2	1,026,018	32.7
Industrial	713,461	18.8	527,485	16.8
Apartment	447,088	11.8	420,014	13.4
Other commercial	172,609	4.6	182,389	5.8
Total	\$ 3,783,207	100.0%	\$ 3,136,764	100.0%

The maturities of the mortgage loans, gross of valuation allowances, as of December 31, 2016 and 2015 are as follows (dollars in thousands):

	2016		2015	
	Recorded Investment	% of Total	Recorded Investment	% of Total
Due within five years	\$ 822,073	21.7%	\$ 873,280	27.8%
Due after five years through ten years	2,099,559	55.5	1,561,535	49.8
Due after ten years	861,575	22.8	701,949	22.4
Total	\$ 3,783,207	100.0%	\$ 3,136,764	100.0%

The following tables set forth certain key credit quality indicators of the Company's recorded investment in mortgage loans, gross of valuation allowances, as of December 31, 2016 and 2015 (dollars in thousands):

	Recorded Investment				
	Debt Service Ratios			Total	% of Total
	>1.20x	1.00x - 1.20x	<1.00x		
December 31, 2016:					
Loan-to-Value Ratio					
0% - 59.99%	\$ 1,859,640	\$ 64,749	\$ 1,366	\$ 1,925,755	50.8%
60% - 69.99%	1,257,788	34,678	—	1,292,466	34.2
70% - 79.99%	370,092	20,869	24,369	415,330	11.0
Greater than 80%	114,297	—	35,359	149,656	4.0
Total	\$ 3,601,817	\$ 120,296	\$ 61,094	\$ 3,783,207	100.0%

	Recorded Investment				
	Debt Service Ratios			Total	% of Total
	>1.20x	1.00x - 1.20x	<1.00x		
December 31, 2015:					
Loan-to-Value Ratio					
0% - 59.99%	\$ 1,621,056	\$ 77,118	\$ 2,367	\$ 1,700,541	54.2%
60% - 69.99%	881,611	14,332	19,805	915,748	29.2%
70% - 79.99%	446,565	7,947	34,539	489,051	15.6%
Greater than 80%	3,948	13,550	13,926	31,424	1.0%
Total	\$ 2,953,180	\$ 112,947	\$ 70,637	\$ 3,136,764	100.0%

None of the payments due to the Company on its recorded investment in mortgage loans were delinquent as of December 31, 2016 and 2015.

The following table presents the recorded investment in mortgage loans, by method of measuring impairment, and the related valuation allowances, as of December 31, 2016 and 2015 (dollars in thousands):

	2016	2015
Mortgage loans:		
Individually measured for impairment	\$ 2,216	\$ 16,421
Collectively measured for impairment	3,780,991	3,120,343
Mortgage loans, gross of valuation allowances	3,783,207	3,136,764
Valuation allowances:		
Individually measured for impairment	—	588
Collectively measured for impairment	7,685	6,225
Total valuation allowances	7,685	6,813
Mortgage loans, net of valuation allowances	\$ 3,775,522	\$ 3,129,951

Information regarding the Company's loan valuation allowances for mortgage loans as of December 31, 2016, 2015 and 2014 are as follows (dollars in thousands):

	2016	2015	2014
Balance, beginning of period	\$ 6,813	\$ 6,471	\$ 10,106
Charge-offs, net of recoveries	—	—	(2,731)
Provision (release)	872	342	(904)
Balance, end of period	\$ 7,685	\$ 6,813	\$ 6,471

Information regarding the portion of the Company's mortgage loans that were impaired as of December 31, 2016 and 2015 is as follows (dollars in thousands):

	Unpaid Principal Balance	Recorded Investment	Related Allowance	Carrying Value
December 31, 2016:				
Impaired mortgage loans with no valuation allowance recorded	\$ 2,758	\$ 2,216	\$ —	\$ 2,216
Impaired mortgage loans with valuation allowance recorded	—	—	—	—
Total impaired mortgage loans	\$ 2,758	\$ 2,216	\$ —	\$ 2,216
December 31, 2015:				
Impaired mortgage loans with no valuation allowance recorded	\$ 4,033	\$ 4,033	\$ —	\$ 4,033
Impaired mortgage loans with valuation allowance recorded	12,898	12,388	588	11,800
Total impaired mortgage loans	\$ 16,931	\$ 16,421	\$ 588	\$ 15,833

The Company's average investment balance of impaired mortgage loans and the related interest income are reflected in the table below for the years ended December 31, 2016, 2015 and 2014 (dollars in thousands):

	2016		2015		2014	
	Average Investment ⁽¹⁾	Interest Income	Average Investment ⁽¹⁾	Interest Income	Average Investment ⁽¹⁾	Interest Income
Impaired mortgage loans with no valuation allowance recorded	\$ 2,249	\$ 142	\$ 6,033	\$ 330	\$ 13,227	\$ 647
Impaired mortgage loans with valuation allowance recorded	—	—	11,592	770	13,827	637
Total	\$ 2,249	\$ 142	\$ 17,625	\$ 1,100	\$ 27,054	\$ 1,284

(1) Average recorded investment represents the average loan balances as of the beginning of period and all subsequent quarterly end of period balances.

The Company did not acquire any impaired mortgage loans during the years ended December 31, 2016 and 2015. The Company had no mortgage loans that were on a nonaccrual status at December 31, 2016 and 2015.

Policy Loans

Policy loans comprised approximately 3.2% and 3.5% of the Company's total investments as of December 31, 2016 and 2015, respectively, the majority of which are associated with one client. These policy loans present no credit risk because the amount of the loan cannot exceed the obligation due to the ceding company upon the death of the insured or surrender of the underlying policy. The provisions of the treaties in force and the underlying policies determine the policy loan interest rates. The Company earns a spread between the interest rate earned on policy loans and the interest rate credited to corresponding liabilities.

Funds Withheld at Interest

Funds withheld at interest comprised approximately 13.1% and 14.0% of the Company's total investments as of December 31, 2016 and 2015, respectively. Of the \$5.9 billion funds withheld at interest balance, net of embedded derivatives, as of December 31, 2016, \$4.0 billion of the balance is associated with one client. For reinsurance agreements written on a modified coinsurance basis and certain agreements written on a coinsurance funds withheld basis, assets equal to the net statutory reserves are withheld and legally owned and managed by the ceding company and are reflected as funds withheld at interest on the Company's consolidated balance sheets. In the event of a ceding company's insolvency, the Company would need to assert a claim on the assets supporting its reserve liabilities. However, the risk of loss to the Company is mitigated by its ability to offset amounts it owes the ceding company for claims or allowances against amounts owed to the Company from the ceding company.

Other Invested Assets

Other invested assets include equity securities, limited partnership interests, joint ventures (other than operating joint ventures), derivative contracts, and FVO contractholder-directed unit-linked investments. Other invested assets also include Federal Home Loan Bank of Des Moines ("FHLB") common stock, equity release mortgages and structured loans, all of which are included in other in the table below. Other invested assets represented approximately 3.6% and 3.1% of the Company's total investments as of December 31, 2016 and 2015, respectively. Carrying values of these assets as of December 31, 2016 and 2015 are as follows (dollars in thousands):

	2016	2015
Equity securities	\$ 275,361	\$ 125,862
Limited partnerships and real estate joint ventures	687,522	567,697
Derivatives	229,108	256,178
FVO contractholder-directed unit-linked investments	190,120	197,547
Other	209,829	150,836
Total other invested assets	\$ 1,591,940	\$ 1,298,120

Note 5 DERIVATIVE INSTRUMENTS

Derivatives, except for embedded derivatives and longevity and mortality swaps, are carried on the Company's consolidated balance sheets in other invested assets or other liabilities, at fair value. Longevity and mortality swaps are included on the consolidated balance sheets in other assets or other liabilities, at fair value. Embedded derivative liabilities on modified coinsurance or funds withheld arrangements are included on the consolidated balance sheets with the host contract in funds withheld at interest, at fair value. Embedded derivative liabilities on indexed annuity and variable annuity products are included on the consolidated balance sheets with the host contract in interest-sensitive contract liabilities, at fair value. The following table presents the notional amounts and gross fair value of derivative instruments prior to taking into account the netting effects of master netting agreements as of December 31, 2016 and 2015 (dollars in thousands):

	December 31, 2016			December 31, 2015		
	Notional Amount	Carrying Value/Fair Value		Notional Amount	Carrying Value/Fair Value	
		Assets	Liabilities		Assets	Liabilities
Derivatives not designated as hedging instruments:						
Interest rate swaps	\$ 949,556	\$ 78,405	\$ 5,949	\$ 1,123,057	\$ 85,075	\$ 4,196
Financial futures	475,968	—	—	420,665	—	—
Foreign currency forwards	25,000	—	5,070	45,000	44	6,768
Consumer price index swaps	20,615	—	262	28,561	—	292
Credit default swaps	926,000	12,012	2,871	897,000	8,230	11,053
Equity options	525,894	33,459	—	453,435	46,653	—
Longevity swaps	841,360	26,958	—	868,960	15,003	7
Mortality swaps	50,000	—	2,462	50,000	—	2,619
Synthetic guaranteed investment contracts	8,834,700	—	—	7,098,825	—	—
Embedded derivatives in:						
Modified coinsurance or funds withheld arrangements	—	—	22,529	—	—	76,698
Indexed annuity products	—	—	805,672	—	—	878,114
Variable annuity products	—	—	184,636	—	—	192,470
Total non-hedging derivatives	12,649,093	150,834	1,029,451	10,985,503	155,005	1,172,217
Derivatives designated as hedging instruments:						
Interest rate swaps	435,000	27,901	31,223	120,000	—	29,986
Foreign currency swaps	928,505	104,359	734	823,486	146,265	—
Total hedging derivatives	1,363,505	132,260	31,957	943,486	146,265	29,986
Total derivatives	\$ 14,012,598	\$ 283,094	\$ 1,061,408	\$ 11,928,989	\$ 301,270	\$ 1,202,203

Netting Arrangements

Certain of the Company's derivatives are subject to enforceable master netting arrangements and reported as a net asset or liability in the consolidated balance sheets. The Company nets all derivatives that are subject to such arrangements.

The Company has elected to include all derivatives, except embedded derivatives, in the tables below, irrespective of whether they are subject to an enforceable master netting arrangement or a similar agreement. See Note 4 – "Investments" for information regarding the Company's securities borrowing, lending, repurchase and repurchase/reverse repurchase programs. See "Embedded Derivatives" below for information regarding the Company's bifurcated embedded derivatives.

The following table provides information relating to the Company's derivative instruments as of December 31, 2016 and December 31, 2015 (dollars in thousands):

	Gross Amounts Recognized	Gross Amounts Offset in the Balance Sheet	Net Amounts Presented in the Balance Sheet	Gross Amounts Not Offset in the Balance Sheet		Net Amount
				Financial Instruments ⁽¹⁾	Cash Collateral Pledged/Received	
December 31, 2016:						
Derivative assets	\$ 283,094	\$ (27,028)	\$ 256,066	\$ (16,913)	\$ (254,498)	\$ (15,345)
Derivative liabilities	48,571	(27,028)	21,543	(95,863)	(1,441)	(75,761)
December 31, 2015:						
Derivative assets	\$ 301,270	\$ (30,096)	\$ 271,174	\$ (20,888)	\$ (245,038)	\$ 5,248
Derivative liabilities	54,921	(30,096)	24,825	(47,149)	(12,540)	(34,864)

(1) Includes initial margin posted to a central clearing partner.

Accounting for Derivative Instruments and Hedging Activities

The Company does not enter into derivative instruments for speculative purposes. As discussed below under "Non-qualifying Derivatives and Derivatives for Purposes Other Than Hedging," the Company uses various derivative instruments for risk management purposes that either do not qualify or have not been qualified for hedge accounting treatment, including derivatives used to economically hedge changes in the fair value of liabilities associated with the reinsurance of variable annuities with guaranteed living benefits. As of December 31, 2016 and 2015, the Company held interest rate swaps that were designated and qualified as cash flow hedges of interest rate risk, for variable rate liabilities and foreign currency assets, foreign currency swaps that were designated and qualified as hedges of a portion of its net investment in its foreign operations, foreign currency swaps that were designated and qualified as fair value hedges of foreign currency risk, and derivative instruments that were not designated as hedging instruments. See Note 2 – "Summary of Significant Accounting Policies" for a detailed discussion of the accounting treatment for derivative instruments, including embedded derivatives. Derivative instruments are carried at fair value and generally require an insignificant amount of cash at inception of the contracts.

Fair Value Hedges

The Company designates and reports certain foreign currency swaps to hedge the foreign currency fair value exposure of foreign currency denominated assets as fair value hedges when they meet the requirements of the general accounting principles for Derivatives and Hedging. The gain or loss on the hedged item attributable to a change in foreign currency and the offsetting gain or loss on the related foreign currency swaps as of December 31, 2016 and 2015 were (dollars in thousands):

Type of Fair Value Hedge	Hedged Item	Gains (Losses) Recognized for Derivatives	Gains (Losses) Recognized for Hedged Items	Ineffectiveness Recognized in Investment Related Gains (Losses)
For the Year Ended December 31, 2016:				
Foreign currency swaps	Foreign-denominated fixed maturity securities	\$ (1,700)	\$ 1,700	\$ —
For the Year Ended December 31, 2015:				
Foreign currency swaps	Foreign-denominated fixed maturity securities	\$ 4,008	\$ (4,008)	\$ —

A regression analysis was used, both at inception of the hedge and on an ongoing basis, to determine whether each derivative used in a hedged transaction is highly effective in offsetting changes in the hedged item. For the foreign currency swaps, the change in fair value related to changes in the benchmark interest rate and credit spreads are excluded from the hedge effectiveness. For the years ended December 31, 2016 and 2015, \$0.4 million and \$0.8 million, respectively, of the change in the estimated fair value of derivatives, was excluded from hedge effectiveness.

Cash Flow Hedges

Certain derivative instruments are designated as cash flow hedges when they meet the requirements of the general accounting principles for *Derivatives and Hedging*. The Company designates and accounts for the following as cash flows: (i) certain interest rate swaps, in which the cash flows of liabilities are variable based on a benchmark rate; (ii) certain interest rate swaps, in which the cash flows of assets are denominated in different currencies, commonly referred to as cross-currency swaps; and (iii) forward bond purchase commitments.

The following table presents the components of AOCI, before income tax, and the consolidated income statement classification where the gain or loss is recognized related to cash flow hedges for the years ended December 31, 2016, 2015 and 2014 (dollars in thousands):

	Amounts Included in AOCI
Balance December 31, 2013	\$ (4,578)
Gains (losses) deferred in other comprehensive income (loss) on the effective portion of cash flow hedges	(25,801)
Amounts reclassified to investment income	(1,212)
Balance December 31, 2014	(31,591)
Gains (losses) deferred in other comprehensive income (loss) on the effective portion of cash flow hedges	2,676
Amounts reclassified to investment related (gains) losses, net	87
Amounts reclassified to investment income	(569)
Balance December 31, 2015	(29,397)
Gains (losses) deferred in other comprehensive income (loss) on the effective portion of cash flow hedges	27,110
Amounts reclassified to investment related (gains) losses, net	278
Amounts reclassified to investment income	(487)
Balance December 31, 2016	\$ (2,496)

As of December 31, 2016, the before-tax deferred net gains (losses) on derivative instruments recorded in AOCI that are expected to be reclassified to earnings during the next twelve months are approximately \$0.4 million. This expectation is based on the anticipated interest payments on hedged investments in fixed maturity securities that will occur over the next twelve months, at which time the Company will recognize the deferred net gains (losses) as an adjustment to investment income over the term of the investment cash flows.

The following table presents the effective portion of derivatives in cash flow hedging relationships on the consolidated statements of income and the consolidated statements of stockholders' equity for the years ended December 31, 2016, 2015 and 2014 (dollars in thousands):

Derivative Type	Gains (Losses) Recognized in OCI	Effective Portion	
		Gains (Losses) Reclassified into Income from OCI	
		Investment Related Gains (Losses)	Investment Income
For the year ended December 31, 2016:			
Interest rate	\$ 27,901	\$ —	\$ —
Currency/Interest rate	(791)	—	510
Forward bond purchase commitments	—	(278)	(23)
Total	\$ 27,110	\$ (278)	\$ 487
For the year ended December 31, 2015:			
Interest rate	\$ (11,422)	\$ —	\$ 343
Forward bond purchase commitments	14,098	(87)	226
Total	\$ 2,676	\$ (87)	\$ 569
For the year ended December 31, 2014:			
Interest rate	\$ (12,431)	\$ —	\$ 1,212
Forward bond purchase commitments	(13,370)	—	—
Total	\$ (25,801)	\$ —	\$ 1,212

All components of each derivative's gain or loss were included in the assessment of hedge effectiveness. For the years ended December 31, 2016, 2015 and 2014, the ineffective portion of derivatives reported as cash flow hedges was not material to the Company's results of operations. Also, there were no material amounts reclassified into earnings relating to instances in which the Company discontinued cash flow hedge accounting because the forecasted transaction did not occur by the anticipated date or within the additional time period permitted by the authoritative guidance for the accounting for derivatives and hedging.

Hedges of Net Investments in Foreign Operations

The Company uses foreign currency swaps to hedge a portion of its net investment in certain foreign operations against adverse movements in exchange rates. The following table illustrates the Company's net investments in foreign operations ("NIFO") hedges for the years ended December 31, 2016, 2015 and 2014 (dollars in thousands):

Type of NIFO Hedge ^{(1) (2)}	Derivative Gains (Losses) Deferred in AOCI		
	For the year ended		
	2016	2015	2014
Foreign currency swaps	\$ (10,234)	\$ 96,019	\$ 51,894

(1) There were no sales or substantial liquidations of net investments in foreign operations that would have required the reclassification of gains or losses from accumulated other comprehensive income (loss) into investment income during the periods presented.

(2) There was no ineffectiveness recognized for the Company's hedges of net investments in foreign operations.

The cumulative foreign currency translation gain recorded in AOCI related to these hedges was \$161.6 million and \$171.9 million at December 31, 2016 and 2015, respectively. If a foreign operation was sold or substantially liquidated, the amounts in AOCI would be reclassified to the consolidated statements of income. A pro rata portion would be reclassified upon partial sale of a foreign operation.

Non-qualifying Derivatives and Derivatives for Purposes Other Than Hedging

The Company uses various other derivative instruments for risk management purposes that either do not qualify or have not been qualified for hedge accounting treatment. The gain or loss related to the change in fair value for these derivative instruments is recognized in investment related gains (losses), net in the consolidated statements of income, except where otherwise noted.

A summary of the effect of non-hedging derivatives, including embedded derivatives, on the Company's consolidated statements of income for the years ended December 31, 2016, 2015 and 2014 is as follows (dollars in thousands):

Type of Non-hedging Derivative	Income Statement Location of Gains (Losses)	Gains (Losses) for the Years Ended December 31,		
		2016	2015	2014
Interest rate swaps	Investment related gains (losses), net	\$ 7,649	\$ 20,358	\$ 94,848
Interest rate options	Investment related gains (losses), net	—	3,275	15,641
Financial futures	Investment related gains (losses), net	(40,242)	319	(9,550)
Foreign currency forwards	Investment related gains (losses), net	1,630	(1,160)	(8,691)
Consumer price index swaps	Investment related gains (losses), net	(401)	(208)	(344)
Credit default swaps	Investment related gains (losses), net	18,100	(4,683)	3,938
Equity options	Investment related gains (losses), net	(28,270)	(16,899)	(22,472)
Longevity swaps	Other revenues	13,095	8,228	8,088
Mortality swaps	Other revenues	(172)	(1,822)	(797)
Subtotal		(28,611)	7,408	80,661
Embedded derivatives in:				
Modified coinsurance or funds withheld arrangements	Investment related gains (losses), net	54,169	(98,792)	198,365
Indexed annuity products	Interest credited	10,708	19,440	(104,844)
Variable annuity products	Investment related gains (losses), net	7,835	(33,192)	(129,224)
Total non-hedging derivatives		\$ 44,101	\$ (105,136)	\$ 44,958

Types of Derivatives Used by the Company

Interest Rate Swaps

Interest rate swaps are used by the Company primarily to reduce market risks from changes in interest rates, to alter interest rate exposure arising from mismatches between assets and liabilities (duration mismatches) and to manage the risk of cash flows of liabilities that are variable based on a benchmark rate. With an interest rate swap, the Company agrees with another party to exchange, at specified intervals, the difference between two rates, which can be either fixed-rate or floating-rate interest amounts, tied to an agreed-upon notional principal amount. These transactions are executed pursuant to master agreements that provide for a single net payment or individual gross payments at each due date. The Company utilizes interest rate swaps in cash flow and non-qualifying hedging relationships.

Interest Rate Options

Interest rate options, commonly referred to as swaptions, have been used by the Company primarily to hedge living benefit guarantees embedded in certain variable annuity products. A swaption, used to hedge against adverse changes in interest rates, is an option to enter into a swap with a forward starting effective date. The Company pays an upfront premium for the right to exercise this option in the future.

Financial Futures

Exchange-traded equity futures are used primarily to economically hedge liabilities embedded in certain variable annuity products. With exchange-traded equity futures transactions, the Company agrees to purchase or sell a specified number of contracts, the value of which is determined by the relevant stock indices, and to post variation margin on a daily basis in an amount equal to the difference between the daily estimated fair values of those contracts. The Company enters into exchange-traded equity futures with regulated futures commission merchants that are members of the exchange.

Equity Options

Equity index options are used by the Company primarily to hedge minimum guarantees embedded in certain variable annuity products. To hedge against adverse changes in equity indices volatility, the Company buys put options. The contracts are net settled in cash based on differentials in the indices at the time of exercise and the strike price. Equity warrants have also been used by the Company to economically hedge the variability in anticipated cash flows for the acquisition of investment securities.

Consumer Price Index Swaps

Consumer price index ("CPI") swaps are used by the Company primarily to economically hedge liabilities embedded in certain insurance products where value is directly affected by changes in a designated benchmark consumer price index. With a CPI swap transaction, the Company agrees with another party to exchange the actual amount of inflation realized over a specified period of time for a fixed amount of inflation determined at inception. These transactions are executed pursuant to master agreements that provide for a single net payment or individual gross payments to be made by the counterparty at each due date. Most of these swaps will require a single payment to be made by one counterparty at the maturity date of the swap.

Foreign Currency Swaps

Foreign currency swaps are used by the Company to reduce the risk from fluctuations in foreign currency exchange rates associated with its assets and liabilities denominated in foreign currencies. With a foreign currency swap transaction, the Company agrees with another party to exchange, at specified intervals, the difference between one currency and another at a forward exchange rate calculated by reference to an agreed-upon principal amount. The principal amount of each currency is exchanged at the termination of the currency swap by each party. The Company uses foreign currency swaps to hedge a portion of its net investment in certain foreign operations and foreign currency securities against adverse movements in exchange rates. The Company also uses foreign currency swaps to hedge its exposure to market risks from changes in currency exchange rates with respect to investments denominated in foreign currencies that the Company either holds or intends to acquire or sell.

Foreign Currency Forwards

Foreign currency forwards are used by the Company to reduce the risk from fluctuations in foreign currency exchange rates associated with its assets and liabilities denominated in foreign currencies. With a foreign currency forward transaction, the Company agrees with another party to deliver a specified amount of an identified currency at a specified future date. The price is agreed upon at the time of the contract and payment for such a contract is made in a different currency at the specified future date.

Forward Bond Purchase Commitments

Forward bond purchase commitments are used by the Company to hedge against the variability in the anticipated cash flows required to purchase securities. With forward bond purchase commitments, the forward price is agreed upon at the time of the contract and payment for such contract is made at the future specified settlement date of the securities.

Credit Default Swaps

The Company sells protection under single name credit default swaps and credit default swap index tranches to diversify its credit risk exposure in certain portfolios and, in combination with purchasing securities, to replicate characteristics of similar investments based on the credit quality and term of the credit default swap. Credit default triggers for indexed reference entities and single name reference entities are defined in the contracts. The Company's maximum exposure to credit loss equals the notional value for credit default swaps. In the event of default of a referencing entity, the Company is typically required to pay the protection holder the full notional value less a recovery amount determined at auction.

The following table presents the estimated fair value, maximum amount of future payments and weighted average years to maturity of credit default swaps sold by the Company at December 31, 2016 and 2015 (dollars in thousands):

Rating Agency Designation of Referenced Credit Obligations ⁽¹⁾	2016			2015		
	Estimated Fair Value of Credit Default Swaps	Maximum Amount of Future Payments under Credit Default Swaps ⁽²⁾	Weighted Average Years to Maturity ⁽³⁾	Estimated Fair Value of Credit Default Swaps	Maximum Amount of Future Payments under Credit Default Swaps ⁽²⁾	Weighted Average Years to Maturity ⁽³⁾
AAA/AA+/AA/AA-/A+/A/A-						
Single name credit default swaps	\$ 1,726	\$ 150,500	3.8	\$ 1,689	\$ 152,500	3.9
Subtotal	1,726	150,500	3.8	1,689	152,500	3.9
BBB+/BBB/BBB-						
Single name credit default swaps	1,426	347,200	3.7	(5,066)	315,200	4.2
Credit default swaps referencing indices	6,295	416,000	5.0	2,274	416,000	5.0
Subtotal	7,721	763,200	4.4	(2,792)	731,200	4.6
BB+/BB/BB-						
Single name credit default swaps	(477)	9,000	3.5	(2,900)	10,000	4.1
Subtotal	(477)	9,000	3.5	(2,900)	10,000	4.1
Total	\$ 8,970	\$ 922,700	4.3	\$ (4,003)	\$ 893,700	4.5

(1) The rating agency designations are based on ratings from Standard and Poor's ("S&P").

(2) Assumes the value of the referenced credit obligations is zero.

(3) The weighted average years to maturity of the credit default swaps is calculated based on weighted average notional amounts.

The Company also purchases credit default swaps to reduce its risk against a drop in bond prices due to credit concerns of certain bond issuers. If a credit event, as defined by the contract, occurs, the Company is able to put the bond back to the counterparty at par.

Longevity Swaps

The Company enters into longevity swaps in the form of out-of-the-money options, which provide protection against changes in mortality improvement to retirement plans and insurers of such plans. With a longevity swap transaction, the Company agrees with another party to exchange a proportion of a notional value. The proportion is determined by the difference between a predefined benefit, and the realized benefit plus the future expected benefit, calculated by reference to a population index for a fixed premium.

Mortality Swaps

Mortality swaps are used by the Company to hedge risk from changes in mortality experience associated with its reinsurance of life insurance risk. The Company agrees with another party to exchange, at specified intervals, a proportion of a notional value determined by the difference between a predefined expected and realized claim amount on a designated index of reinsured lives, for a fixed percentage (premium) each term.

Synthetic Guaranteed Investment Contracts

The Company sells fee-based synthetic guaranteed investment contracts to retirement plans which include investment-only, stable value contracts. The assets are owned by the trustees of such plans, who invest the assets under the terms of investment guidelines to which the Company agrees. The contracts contain a guarantee of a minimum rate of return on participant balances supported by the underlying assets, and a guarantee of liquidity to meet certain participant-initiated plan cash flow requirements. These contracts are reported as derivatives, recorded at fair value and classified as interest rate derivatives.

Embedded Derivatives

The Company has certain embedded derivatives which are required to be separated from their host contracts and reported as derivatives. Host contracts include reinsurance treaties structured on a modified coinsurance or funds withheld basis. Additionally, the Company reinsures equity-indexed annuity and variable annuity contracts with benefits that are considered embedded derivatives, including guaranteed minimum withdrawal benefits, guaranteed minimum accumulation benefits, and guaranteed minimum income benefits. The changes in fair values of embedded derivatives on equity-indexed annuities described below relate to changes in the fair value associated with capital market and other related assumptions. The Company's utilization of a credit valuation adjustment did not have a material effect on the change in fair value of its embedded derivatives for the years ended December 31, 2016, 2015 and 2014. The related gains (losses) and the effect on net income after amortization of DAC and income taxes for the years ended December 31, 2016, 2015 and 2014 are reflected in the following table (dollars in thousands):

	2016	2015	2014
Embedded derivatives in modified coinsurance or funds withheld arrangements included in investment related gains	\$ 54,169	\$ 98,792	\$ 198,365
After the associated amortization of DAC and taxes, the related amounts included in net income	9,160	(26,025)	45,171
Embedded derivatives in variable annuity contracts included in investment related gains	7,835	(33,192)	(129,224)
After the associated amortization of DAC and taxes, the related amounts included in net income	(41,201)	(29,008)	27,601
Amounts related to embedded derivatives in equity-indexed annuities included in benefits and expenses	10,708	19,440	(104,844)
After the associated amortization of DAC and taxes, the related amounts included in net income	(4,148)	6,204	(69,963)

Credit Risk

The Company manages its credit risk related to over-the-counter (“OTC”) derivatives by entering into transactions with creditworthy counterparties, maintaining collateral arrangements and through the use of master netting agreements that provide for a single net payment to be made by one counterparty to another at each due date and upon termination.

The credit exposure of the Company’s OTC derivative transactions is represented by the contracts with a positive fair value (market value) at the reporting date. To reduce credit exposures, the Company seeks to (i) enter into OTC derivative transactions pursuant to master netting agreements that provide for a netting of payments and receipts with a single counterparty, and (ii) enter into agreements that allow the use of credit support annexes, which are bilateral rating-sensitive agreements that require collateral postings at established threshold levels. Certain of the Company’s OTC derivatives are cleared derivatives, which are bilateral transactions between the Company and a counterparty where the transactions are cleared through a clearinghouse, such that each derivative counterparty is only exposed to the default of the clearinghouse. These cleared transactions require initial and daily variation margin collateral postings and include certain interest rate swaps and credit default swaps entered into on or after June 10, 2013, related to guidelines implemented under the Dodd-Frank Wall Street Reform and Consumer Protection Act. Also, the Company enters into exchange-traded futures through regulated exchanges and these transactions are settled on a daily basis, thereby reducing credit risk exposure in the event of non-performance by counterparties to such financial instruments.

The Company enters into various collateral arrangements, which require both the posting and accepting of collateral in connection with its derivative instruments. Collateral agreements contain attachment thresholds that may vary depending on the posting party’s ratings. Additionally, a decline in the Company’s or the counterparty’s credit ratings to specified levels could result in potential settlement of the derivative positions under the Company’s agreements with its counterparties. The Company also has exchange-traded futures, which require the maintenance of a margin account. As exchange-traded futures are affected through regulated exchanges, and positions are marked to market on a daily basis, the Company has minimal exposure to credit-related losses in the event of nonperformance by counterparties.

The Company’s credit exposure related to derivative contracts is generally limited to the fair value at the reporting date plus or minus any collateral posted or held by the Company. The Company’s credit exposure to mortality swaps is minimal, as they are fully collateralized by a counterparty. Information regarding the Company’s credit exposure related to its over-the-counter derivative contracts, centrally cleared derivative contracts and margin account for exchange-traded futures, excluding mortality swaps, at December 31, 2016 and 2015 is reflected in the following table (dollars in thousands):

	2016	2015
Estimated fair value of derivatives in net asset position	\$ 236,985	\$ 248,968
Cash provided as collateral ⁽¹⁾	1,441	12,540
Securities pledged to counterparties as collateral ⁽²⁾	95,863	47,149
Cash pledged from counterparties as collateral ⁽³⁾	(254,498)	(245,038)
Securities pledged from counterparties as collateral ⁽⁴⁾	(16,913)	(20,888)
Initial margin for cleared derivatives	(73,571)	(34,898)
Net amount after application of master netting agreements and collateral	\$ (10,693)	\$ 7,833
Margin account related to exchange-traded futures ⁽⁵⁾	\$ 9,687	\$ 11,004

(1) Consists of receivable from counterparty, included in other assets.

(2) Included in available-for-sale securities, primarily consists of U.S. Treasury and government agency securities.

(3) Included in cash and cash equivalents, with obligation to return cash collateral recorded in other liabilities.

(4) Consists of U.S. Treasury and government agency securities.

(5) Included in other assets.

Note 6 FAIR VALUE OF ASSETS AND LIABILITIES

Fair Value Measurement

General accounting principles for *Fair Value Measurements and Disclosures* define fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. These principles also establish a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value and describes three levels of inputs that may be used to measure fair value:

Level 1 - Unadjusted quoted prices in active markets for identical assets or liabilities. Active markets are defined as having the following characteristics for the measured asset/liability: (i) many transactions, (ii) current prices, (iii) price quotes not varying substantially among market makers, (iv) narrow bid/ask spreads and (v) most information publicly available. The Company's Level 1 assets include assets and liabilities that are traded in active exchange markets.

Level 2 - Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or market standard valuation techniques and assumptions that use significant inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Such observable inputs include benchmarking prices for similar assets in active, liquid markets, quoted prices in markets that are not active and observable yields and spreads in the market. The Company's Level 2 assets and liabilities include investment securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts whose values are determined using market standard valuation techniques. Level 2 valuations are generally obtained from third party pricing services for identical or comparable assets or liabilities or through the use of valuation methodologies using observable market inputs. Prices from servicers are validated through analytical reviews and assessment of current market activity.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the related assets or liabilities. Level 3 assets and liabilities include those whose value is determined using market standard valuation techniques described above. When observable inputs are not available, the market standard techniques for determining the estimated fair value of certain securities that trade infrequently, and therefore have little transparency, rely on inputs that are significant to the estimated fair value and that are not observable in the market or cannot be derived principally from or corroborated by observable market data. These unobservable inputs can be based in large part on management judgment or estimation and cannot be supported by reference to market activity. Even though unobservable, management believes these inputs are based on assumptions deemed appropriate given the circumstances and consistent with what other market participants would use when pricing similar assets and liabilities. For the Company's invested assets, this category generally includes corporate securities (primarily private placements and bank loans), Canadian provincial securities, asset-backed securities (including collateralized debt obligations and those with exposure to subprime mortgages), and to a lesser extent, certain residential and commercial mortgage-backed securities, and state and political subdivisions, among others. Prices are determined using valuation methodologies such as discounted cash flow models and other similar techniques that require management's judgment or estimation in developing inputs that are consistent with those other market participants would use when pricing similar assets and liabilities. Non-binding broker quotes, which are utilized when pricing service information is not available, are reviewed for reasonableness based on the Company's understanding of the market, and are generally considered Level 3. Under certain circumstances, based on its observations of transactions in active markets, the Company may conclude the prices received from independent third party pricing services or brokers are not reasonable or reflective of market activity. In those instances, the Company would apply internally developed valuation techniques to the related assets or liabilities. Additionally, the Company's embedded derivatives, all of which are associated with reinsurance treaties, and longevity and mortality swaps are classified in Level 3 since their values include significant unobservable inputs.

When inputs used to measure the fair value of an asset or liability fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to the fair value measurement in its entirety, except for fair value measurements using NAV. For example, a Level 3 fair value measurement may include inputs that are observable (Levels 1 and 2) and unobservable (Level 3). Therefore, gains and losses for such assets and liabilities categorized within Level 3 may include changes in fair value that are attributable to both observable inputs (Levels 1 and 2) and unobservable inputs (Level 3).

Assets and Liabilities by Hierarchy Level

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2016 and December 31, 2015 are summarized below (dollars in thousands):

December 31, 2016:

	Total	Fair Value Measurements Using:		
		Level 1	Level 2	Level 3
Assets:				
Fixed maturity securities – available-for-sale:				
Corporate securities	\$ 19,619,084	\$ 310,995	\$ 18,035,836	\$ 1,272,253
Canadian and Canadian provincial governments	3,644,046	—	3,168,081	475,965
Residential mortgage-backed securities	1,278,576	—	1,118,285	160,291
Asset-backed securities	1,429,344	—	1,210,064	219,280
Commercial mortgage-backed securities	1,363,654	—	1,342,509	21,145
U.S. government and agencies	1,468,302	1,345,755	98,059	24,488
State and political subdivisions	591,796	—	550,130	41,666
Other foreign government, supranational and foreign government-sponsored enterprises	2,698,823	276,729	2,409,225	12,869
Total fixed maturity securities – available-for-sale	32,093,625	1,933,479	27,932,189	2,227,957
Funds withheld at interest – embedded derivatives	(22,529)	—	—	(22,529)
Cash equivalents	338,601	338,601	—	—
Short-term investments	44,241	8,276	32,619	3,346
Other invested assets:				
Non-redeemable preferred stock	51,123	38,317	12,806	—
Other equity securities	224,238	224,238	—	—
Derivatives:				
Interest rate swaps	93,508	—	93,508	—
Credit default swaps	9,136	—	9,136	—
Equity options	26,070	—	26,070	—
Foreign currency swaps	100,394	—	100,394	—
FVO contractholder-directed unit-linked investments	190,120	188,891	1,229	—
Other	11,036	11,036	—	—
Total other invested assets	705,625	462,482	243,143	—
Other assets - longevity swaps	26,958	—	—	26,958
Total	\$ 33,186,521	\$ 2,742,838	\$ 28,207,951	\$ 2,235,732
Liabilities:				
Interest sensitive contract liabilities – embedded derivatives	\$ 990,308	\$ —	\$ —	\$ 990,308
Other liabilities:				
Derivatives:				
Interest rate swaps	24,374	—	24,374	—
Foreign currency forwards	5,070	—	5,070	—
CPI swaps	262	—	262	—
Credit default swaps	(5)	—	(5)	—
Equity options	(7,389)	—	(7,389)	—
Foreign currency swaps	(3,231)	—	(3,231)	—
Mortality swaps	2,462	—	—	2,462
Total	\$ 1,011,851	\$ —	\$ 19,081	\$ 992,770

December 31, 2015:

	Fair Value Measurements Using:			
	Total	Level 1	Level 2	Level 3
Assets:				
Fixed maturity securities – available-for-sale:				
Corporate securities	\$ 17,708,156	\$ 269,039	\$ 16,212,147	\$ 1,226,970
Canadian and Canadian provincial governments	3,576,759	—	3,160,683	416,076
Residential mortgage-backed securities	1,311,477	—	980,828	330,649
Asset-backed securities	1,212,676	—	908,840	303,836
Commercial mortgage-backed securities	1,483,087	—	1,414,524	68,563
U.S. government and agencies	1,381,659	1,227,858	127,536	26,265
State and political subdivisions	511,014	—	472,672	38,342
Other foreign government, supranational and foreign government-sponsored enterprises	2,458,077	260,552	2,183,460	14,065
Total fixed maturity securities – available-for-sale	29,642,905	1,757,449	25,460,690	2,424,766
Funds withheld at interest – embedded derivatives	(76,698)	—	—	(76,698)
Cash equivalents	406,521	406,521	—	—
Short-term investments	530,773	524,946	5,827	—
Other invested assets:				
Non-redeemable preferred stock	87,520	81,809	5,711	—
Other equity securities	38,342	38,342	—	—
Derivatives:				
Interest rate swaps	71,882	—	71,882	—
Foreign currency forwards	20	—	20	—
CPI swaps	(292)	—	(292)	—
Credit default swaps	2,567	—	2,567	—
Equity options	40,644	—	40,644	—
Foreign currency swaps	141,357	—	141,357	—
FVO contractholder-directed unit-linked investments	197,547	195,317	2,230	—
Other	8,170	8,170	—	—
Total other invested assets	587,757	323,638	264,119	—
Other assets - longevity swaps	14,996	—	—	14,996
Total	\$ 31,106,254	\$ 3,012,554	\$ 25,730,636	\$ 2,363,064
Liabilities:				
Interest sensitive contract liabilities – embedded derivatives	\$ 1,070,584	\$ —	\$ —	\$ 1,070,584
Other liabilities:				
Derivatives:				
Interest rate swaps	20,989	—	20,989	—
Foreign currency forwards	6,744	—	6,744	—
Credit default swaps	5,390	—	5,390	—
Equity options	(6,009)	—	(6,009)	—
Foreign currency swaps	(4,908)	—	(4,908)	—
Mortality swaps	2,619	—	—	2,619
Total	\$ 1,095,409	\$ —	\$ 22,206	\$ 1,073,203

The Company may utilize information from third parties, such as pricing services and brokers, to assist in determining the fair value for certain assets and liabilities; however, management is ultimately responsible for all fair values presented in the Company's financial statements. This includes responsibility for monitoring the fair value process, ensuring objective and reliable valuation practices and pricing of assets and liabilities, and approving changes to valuation methodologies and pricing sources. The selection of the valuation technique(s) to apply considers the definition of an exit price and the nature of the asset or liability being valued and significant expertise and judgment is required.

The Company performs initial and ongoing analysis and review of the various techniques utilized in determining fair value to ensure that they are appropriate and consistently applied, and that the various assumptions are reasonable. The Company analyzes and reviews the information and prices received from third parties to ensure that the prices represent a reasonable estimate of the fair value and to monitor controls around pricing, which includes quantitative and qualitative analysis and is overseen by the Company's investment and accounting personnel. Examples of procedures performed include, but are not limited to, review of pricing trends, comparison of a sample of executed prices of securities sold to the fair value estimates, comparison of fair value estimates to management's knowledge of the current market, and ongoing confirmation that third party pricing services use, wherever possible, market-based parameters for valuation. In addition, the Company utilizes both internal and external cash flow models to analyze the reasonableness of fair values utilizing credit spread and other market assumptions, where appropriate. As

a result of the analysis, if the Company determines there is a more appropriate fair value based upon the available market data, the price received from the third party is adjusted accordingly. The Company also determines if the inputs used in estimated fair values received from pricing services are observable by assessing whether these inputs can be corroborated by observable market data.

For assets and liabilities reported at fair value, the Company utilizes when available, fair values based on quoted prices in active markets that are regularly and readily obtainable. Generally, these are very liquid investments and the valuation does not require management judgment. When quoted prices in active markets are not available, fair value is based on market valuation techniques, market comparable pricing and the income approach. The use of different techniques, assumptions and inputs may have a material effect on the estimated fair values of the Company's securities holdings. For the periods presented, the application of market standard valuation techniques applied to similar assets and liabilities has been consistent.

The methods and assumptions the Company uses to estimate the fair value of assets and liabilities measured at fair value on a recurring basis are summarized below.

Fixed Maturity Securities – The fair values of the Company's publicly-traded fixed maturity securities are generally based on prices obtained from independent pricing services. Prices from pricing services are sourced from multiple vendors, and a vendor hierarchy is maintained by asset type based on historical pricing experience and vendor expertise. The Company generally receives prices from multiple pricing services for each security, but ultimately uses the price from the vendor that is highest in the hierarchy for the respective asset type. To validate reasonableness, prices are periodically reviewed as explained above. Consistent with the fair value hierarchy described above, securities with quotes from pricing services are generally reflected within Level 2, as they are primarily based on observable pricing for similar assets and/or other market observable inputs. If the pricing information received from third party pricing services is not reflective of market activity or other inputs observable in the market, the Company may challenge the price through a formal process with the pricing service.

If the Company ultimately concludes that pricing information received from the independent pricing service is not reflective of fair value, non-binding broker quotes are used, if available. If the Company concludes that the values from both pricing services and brokers are not reflective of fair value an internally developed valuation may be prepared; however, this occurs infrequently. Internally developed valuations or non-binding broker quotes are also used to determine fair value in circumstances where vendor pricing is not available. These valuations may use significant unobservable inputs, which reflect the Company's assumptions about the inputs that market participants would use in pricing the asset. Observable market data may not be available in certain circumstances such as market illiquidity and credit events related to the security. Pricing service overrides, internally developed valuations and non-binding broker quotes are generally based on significant unobservable inputs and are reflected as Level 3 in the valuation hierarchy.

The inputs used in the valuation of corporate and government securities include, but are not limited to standard market observable inputs which are derived from, or corroborated by, market observable data including market yield curve, duration, call provisions, observable prices and spreads for similar publicly traded or privately traded issues that incorporate the credit quality and industry sector of the issuer. For structured securities, valuation is based primarily on matrix pricing or other similar techniques using standard market inputs including spreads for actively traded securities, spreads off benchmark yields, expected prepayment speeds and volumes, current and forecasted loss severity, rating, weighted average coupon, weighted average maturity, average delinquency rates, geographic region, debt-service coverage ratios and issuance-specific information including, but not limited to: collateral type, payment terms of the underlying assets, payment priority within the tranche, structure of the security, deal performance and vintage of loans.

When observable inputs are not available, the market standard valuation techniques for determining the estimated fair value of certain types of securities that trade infrequently, and therefore have little or no price transparency, rely on inputs that are significant to the estimated fair value that are not observable in the market or cannot be derived principally from or corroborated by observable market data. These unobservable inputs can be based in large part on management judgment or estimation, and cannot be supported by reference to market activity. Even though unobservable, these inputs are based on assumptions deemed appropriate given the circumstances and are believed to be consistent with what other market participants would use when pricing such securities.

The fair values of private placement securities are primarily determined using a discounted cash flow model. In certain cases these models primarily use observable inputs with a discount rate based upon the average of spread surveys collected from private market intermediaries who are active in both primary and secondary transactions, taking into account, among other factors, the credit quality and industry sector of the issuer and the reduced liquidity associated with private placements. Generally, these securities have been reflected within Level 3. For certain private fixed maturities, the discounted cash flow model may also incorporate significant unobservable inputs, which reflect the Company's own assumptions about the inputs market participants would use in pricing the security. To the extent management determines that such unobservable inputs are not significant to the price of a security, a Level 2 classification is made. Otherwise, a Level 3 classification is used.

Embedded Derivatives – The fair value of embedded derivative liabilities, including those calculated by third parties, are monitored through the use of attribution reports to quantify the effect of underlying sources of fair value change, including capital market

inputs based on policyholder account values, interest rates and short-term and long-term implied volatilities, from period to period. Actuarial assumptions are based on experience studies performed internally in combination with available industry information and are reviewed on a periodic basis, at least annually.

For embedded derivative liabilities associated with the underlying products in reinsurance treaties, primarily equity-indexed and variable annuity treaties, the Company utilizes a discounted cash flow model, which includes an estimate of future equity option purchases and an adjustment for a CVA. The variable annuity embedded derivative calculations are performed by third parties based on methodology and input assumptions provided by the Company. To validate the reasonableness of the resulting fair value, the Company's internal actuaries perform reviews and analytical procedures on the results. The capital market inputs to the model, such as equity indexes, short-term equity volatility and interest rates, are generally observable. The valuation also requires certain significant inputs, which are generally not observable and accordingly, the valuation is considered Level 3 in the fair value hierarchy, see "Level 3 Measurements and Transfers" below for a description.

The fair value of embedded derivatives associated with funds withheld reinsurance treaties is determined based upon a total return swap technique with reference to the fair value of the investments held by the ceding company that support the Company's funds withheld at interest asset with an adjustment for a CVA. The fair value of the underlying assets is generally based on market observable inputs using industry standard valuation techniques. The valuation also requires certain significant inputs, which are generally not observable and accordingly, the valuation is considered Level 3 in the fair value hierarchy, see "Level 3 Measurements and Transfers" below for a description.

Credit Valuation Adjustment – The Company uses a structural default risk model to estimate a CVA. The input assumptions are a combination of externally derived and published values (default threshold and uncertainty), market inputs (interest rate, equity price per share, debt per share, equity price volatility) and insurance industry data (Loss Given Default), adjusted for market recoverability.

Cash Equivalents and Short-Term Investments – Cash equivalents and short-term investments include money market instruments, commercial paper and other highly liquid debt instruments. Money market instruments are generally valued using unadjusted quoted prices in active markets that are accessible for identical assets and are primarily classified as Level 1. The fair value of certain other cash equivalents and short-term investments, such as floating rate notes and bonds with original maturities less than twelve months, are based upon other market observable data and are typically classified as Level 2. However, certain short-term investments may incorporate significant unobservable inputs resulting in a Level 3 classification. Various time deposits carried as cash equivalents or short-term investments are not measured at estimated fair value and therefore are excluded from the tables presented.

Equity Securities – Equity securities consist principally of exchange-traded funds and preferred stock of publicly and privately traded companies. The fair values of publicly traded equity securities are primarily based on quoted market prices in active markets and are classified within Level 1 in the fair value hierarchy. The fair values of preferred equity securities, for which quoted market prices are not readily available, are based on prices obtained from independent pricing services and these securities are generally classified within Level 2 in the fair value hierarchy. Non-binding broker quotes for equity securities are generally based on significant unobservable inputs and are reflected as Level 3 in the fair value hierarchy.

FVO Contractholder-Directed Unit-Linked Investments – FVO contractholder-directed investments supporting unit-linked variable annuity type liabilities primarily consist of exchange-traded funds and, to a lesser extent, fixed maturity securities and cash and cash equivalents. The fair values of the exchange-traded securities are primarily based on quoted market prices in active markets and are classified within Level 1 of the hierarchy. The fair value of the fixed maturity contractholder-directed securities is determined on a basis consistent with the methodologies described above for fixed maturity securities and are classified within Level 2 of the hierarchy.

Derivative Assets and Derivative Liabilities – All of the derivative instruments utilized by the Company, except for longevity and mortality swaps, are classified within Level 2 on the fair value hierarchy. These derivatives are principally valued using an income approach. Valuations of interest rate contracts are based on present value techniques, which utilize significant inputs that may include the swap yield curve, London Interbank Offered Rate ("LIBOR") basis curves, and repurchase rates. Valuations of foreign currency contracts are based on present value techniques, which utilize significant inputs that may include the swap yield curve, LIBOR basis curves, currency spot rates, and cross currency basis curves. Valuations of credit contracts, are based on present value techniques, which utilize significant inputs that may include the swap yield curve, credit curves, and recovery rates. Valuations of equity market contracts, are based on present value techniques, which utilize significant inputs that may include the swap yield curve, spot equity index levels, and dividend yield curves. Valuations of equity market contracts, option-based, are based on option pricing models, which utilize significant inputs that may include the swap yield curve, spot equity index levels, dividend yield curves, and equity volatility. The Company does not currently have derivatives, except for longevity and mortality swaps, included in Level 3 measurement.

Longevity and Mortality Swaps – The Company utilizes a discounted cash flow model to estimate the fair value of longevity and mortality swaps. The fair value of these swaps includes an accrual for premiums payable and receivable. Some inputs to the

valuation model are generally observable, such as interest rates and actual population mortality experience. The valuation also requires significant inputs that are generally not observable and, accordingly, the valuation is considered Level 3 in the fair value hierarchy.

Level 3 Measurements and Transfers

As of December 31, 2016 and December 31, 2015, respectively, the Company classified approximately 6.9% and 8.2% of its fixed maturity securities in the Level 3 category. These securities primarily consist of private placement corporate securities and bank loans as well as Canadian provincial strips with inactive trading markets. Additionally, the Company has included asset-backed securities with subprime exposure and mortgage-backed securities with below investment grade ratings in the Level 3 category due to market uncertainty associated with these securities and the Company's utilization of unobservable information from third parties for the valuation of these securities.

The significant unobservable inputs used in the fair value measurement of the Company's corporate, sovereign, government-backed, and other political subdivision investments are probability of default, liquidity premium and subordination premium. Significant increases (decreases) in any of those inputs in isolation would result in a significantly lower (higher) fair value measurement. Generally, a change in the assumption used for the probability of default is accompanied by a directionally similar change in the assumptions used for the liquidity premium and subordination premium. For securities with a fair value derived using the market comparable pricing valuation technique, liquidity premium is the only significant unobservable input.

The significant unobservable inputs used in the fair value measurement of the Company's asset and mortgage-backed securities are prepayment rates, probability of default, liquidity premium and loss severity in the event of default. Significant increases (decreases) in any of those inputs in isolation would result in a significantly lower (higher) fair value measurement. Generally, a change in the assumption used for the probability of default is accompanied by a directionally similar change in the assumption used for the liquidity premium and loss severity and a directionally opposite change in the assumption used for prepayment rates.

The actuarial assumptions used in the fair value of embedded derivatives which include assumptions related to lapses, withdrawals, and mortality, are based on experience studies performed by the Company in combination with available industry information and are reviewed on a periodic basis, at least annually. The significant unobservable inputs used in the fair value measurement of embedded derivatives are assumptions associated with policyholder experience and selected capital market assumptions for equity-indexed and variable annuities. The selected capital market assumptions, which include long-term implied volatilities, are projections based on short-term historical information. Changes in interest rates, equity indices, equity volatility, CVA, and actuarial assumptions regarding policyholder experience may result in significant fluctuations in the value of embedded derivatives.

Fair value measurements associated with funds withheld reinsurance treaties are generally not materially sensitive to changes in unobservable inputs associated with policyholder experience. The primary drivers of change in these fair values are related to movements of credit spreads, which are generally observable. Increases (decreases) in market credit spreads tend to decrease (increase) the fair value of embedded derivatives. Increases (decreases) in the CVA assumption tend to decrease (increase) the magnitude of the fair value of embedded derivatives.

Fair value measurements associated with variable annuity treaties are sensitive to both capital markets inputs and policyholder experience inputs. Increases (decreases) in lapse rates tend to decrease (increase) the value of the embedded derivatives associated with variable annuity treaties. Increases (decreases) in the long-term volatility assumption tend to increase (decrease) the fair value of embedded derivatives. Increases (decreases) in the CVA assumption tend to decrease (increase) the magnitude of the fair value of embedded derivatives.

The actuarial assumptions used in the fair value of longevity and mortality swaps include assumptions related to the level and volatility of mortality. The assumptions are based on studies performed by the Company in combination with available industry information and are reviewed on a periodic basis, at least annually.

The following table presents quantitative information about significant unobservable inputs used in Level 3 fair value measurements that are developed internally by the Company as of December 31, 2016 and 2015 (dollars in thousands):

Assets:	Fair Value		Valuation Technique	Unobservable Input	Range (Weighted Average)	
	2016	2015			2016	2015
Corporate securities	\$ 167,815	\$ 195,557	Market comparable securities	Liquidity premium	0-2% (1%)	0-2% (1%)
U.S. government and agencies	24,488	26,265	Market comparable securities	Liquidity premium	0-1% (1%)	0-1% (1%)
State and political subdivisions	4,670	4,770	Market comparable securities	Liquidity premium	1%	1%
Funds withheld at interest-embedded derivatives	(22,529)	(76,698)	Total return swap	Mortality	0-100% (2%)	0-100% (2%)
				Lapse	0-35% (8%)	0-35% (7%)
				Withdrawal	0-5% (3%)	0-5% (3%)
				CVA	0-5% (1%)	0-5% (1%)
				Crediting rate	2-4% (2%)	2-4% (3%)
Longevity swaps	26,958	14,996	Discounted cash flow	Mortality	0-100% (2%)	0-100% (2%)
				Mortality improvement	(10%)-10% (3%)	(10%)-10% (3%)
Liabilities:						
Interest sensitive contract liabilities- embedded derivatives-indexed annuities	805,672	878,114	Discounted cash flow	Mortality	0-100% (2%)	0-100% (2%)
				Lapse	0-35% (8%)	0-35% (7%)
				Withdrawal	0-5% (3%)	0-5% (3%)
				Option budget projection	2-4% (2%)	2-4% (3%)
Interest sensitive contract liabilities- embedded derivatives-variable annuities	184,636	192,470	Discounted cash flow	Mortality	0-100% (2%)	0-100% (2%)
				Lapse	0-25% (6%)	0-25% (7%)
				Withdrawal	0-7% (3%)	0-7% (3%)
				CVA	0-5% (1%)	0-5% (1%)
Mortality swaps	2,462	2,619	Discounted cash flow	Long-term volatility	0-27% (14%)	0-27% (14%)
				Mortality	0-100% (1%)	0-100% (1%)

The Company recognizes transfers of assets and liabilities into and out of levels within the fair value hierarchy at the beginning of the quarter in which the actual event or change in circumstances that caused the transfer occurs. Assets and liabilities transferred into Level 3 are due to a lack of observable market transactions and price information. Assets and liabilities are transferred out of Level 3 when circumstances change such that significant inputs can be corroborated with market observable data. This may be due to a significant increase in market activity for the asset or liability, a specific event, or one or more significant input(s) becoming observable. Transfers out of Level 3 were primarily the result of the Company obtaining observable pricing information or a third party pricing quotation that appropriately reflects the fair value of those assets and liabilities. In addition, certain transfers out of Level 3 were also due to ratings upgrades on mortgage-backed securities that had previously had below investment-grade ratings.

Transfers from Level 1 to Level 2 are due to the lack of observable market data when pricing these securities, while transfers from Level 2 to Level 1 are due to an increase in the availability of market observable data in an active market. There were no transfers between Level 1 and Level 2 during the year ended December 31, 2016. The following table presents the transfers between Level 1 and Level 2 during the year ended December 31, 2015 (dollars in thousands):

Fixed maturity securities - available-for-sale:	2015	
	Transfers from Level 1 to Level 2	Transfers from Level 2 to Level 1
Corporate securities	\$ 32,206	\$ 127,653

The tables below provide a summary of the changes in fair value of Level 3 assets and liabilities for the year ended December 31, 2016, as well as the portion of gains or losses included in income for the year ended December 31, 2016 attributable to unrealized gains or losses related to those assets and liabilities still held at December 31, 2016 (dollars in thousands):

For the year ended December 31, 2016:

	Fixed maturity securities - available-for-sale			
	Corporate securities	Canadian and Canadian provincial governments	Residential mortgage-backed securities	Asset-backed securities
Fair value, beginning of period	\$ 1,226,970	\$ 416,076	\$ 330,649	\$ 303,836
Total gains/losses (realized/unrealized)				
Included in earnings, net:				
Investment income, net of related expenses	(2,399)	12,197	(595)	801
Investment related gains (losses), net	(4,756)	—	(2,153)	1,101
Included in other comprehensive income	10,022	47,692	(1,621)	(2,696)
Purchases ⁽¹⁾	312,720	—	103,553	138,522
Sales ⁽¹⁾	(60,399)	—	(167,684)	(38,681)
Settlements ⁽¹⁾	(195,016)	—	(38,495)	(61,770)
Transfers into Level 3	14,098	—	1,728	56,105
Transfers out of Level 3	(28,987)	—	(65,091)	(177,938)
Fair value, end of period	\$ 1,272,253	\$ 475,965	\$ 160,291	\$ 219,280
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period				
Included in earnings, net:				
Investment income, net of related expenses	\$ (2,343)	\$ 12,197	\$ (158)	\$ 734
Investment related gains (losses), net	(817)	—	(231)	—

For the year ended December 31, 2016 (continued):

	Fixed maturity securities - available-for-sale				
	Commercial mortgage-backed securities	U.S. government and agencies	State and political subdivisions	Other foreign government, supranational and foreign government-sponsored enterprises	Short-term investments
Fair value, beginning of period	\$ 68,563	\$ 26,265	\$ 38,342	\$ 14,065	\$ —
Total gains/losses (realized/unrealized)					
Included in earnings, net:					
Investment income, net of related expenses	1,677	(487)	215	—	—
Investment related gains (losses), net	(876)	—	—	—	—
Included in other comprehensive income	(5,887)	39	962	110	—
Purchases ⁽¹⁾	1,545	508	6,952	—	3,365
Sales ⁽¹⁾	(41,143)	—	—	—	—
Settlements ⁽¹⁾	(552)	(1,837)	(599)	(1,306)	(19)
Transfers into Level 3	—	—	—	—	—
Transfers out of Level 3	(2,182)	—	(4,206)	—	—
Fair value, end of period	\$ 21,145	\$ 24,488	\$ 41,666	\$ 12,869	\$ 3,346
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period					
Included in earnings, net:					
Investment income, net of related expenses	\$ 1,552	\$ (487)	\$ 215	\$ —	\$ —

For the year ended December 31, 2016 (continued):

	Funds withheld at interest-embedded derivatives	Other assets - longevity swaps	Interest sensitive contract liabilities embedded derivatives	Other liabilities - mortality swaps
Fair value, beginning of period	\$ (76,698)	\$ 14,996	\$ (1,070,584)	\$ (2,619)
Total gains/losses (realized/unrealized)				
Included in earnings, net:				
Investment related gains (losses), net	54,169	—	7,834	—
Interest credited	—	—	10,709	—
Included in other comprehensive income	—	(1,133)	—	—
Other revenue	—	13,095	—	(172)
Purchases ⁽¹⁾	—	—	(12,725)	—
Settlements ⁽¹⁾	—	—	74,458	329
Fair value, end of period	\$ (22,529)	\$ 26,958	\$ (990,308)	\$ (2,462)
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period				
Included in earnings, net:				
Investment related gains (losses), net	\$ 54,169	\$ —	\$ (4,579)	\$ —
Other revenue	—	13,095	—	(172)
Interest credited	—	—	(63,748)	—

(1) The amount reported within purchases, sales and settlements is the purchase price (for purchases) and the sales/settlement proceeds (for sales and settlements) based upon the actual date purchased or sold/settled. Items purchased and sold/settled in the same period are excluded from the rollforward. The Company had no issuances during the period.

The tables below provide a summary of the changes in fair value of Level 3 assets and liabilities for the year ended December 31, 2015, as well as the portion of gains or losses included in income for the year ended December 31, 2015 attributable to unrealized gains or losses related to those assets and liabilities still held at December 31, 2015 (dollars in thousands).

For the year ended December 31, 2015:

	Fixed maturity securities - available-for-sale			
	Corporate securities	Canadian and Canadian provincial governments	Residential mortgage-backed securities	Asset-backed securities
Fair value, beginning of period	\$ 1,310,427	\$ —	\$ 188,094	\$ 572,960
Total gains/losses (realized/unrealized)				
Included in earnings, net:				
Investment income, net of related expenses	(3,517)	2,788	(1,754)	4,526
Investment related gains (losses), net	(2,814)	—	(216)	808
Included in other comprehensive income	(32,452)	70,144	(944)	(2,490)
Purchases ⁽¹⁾	243,871	—	249,208	229,220
Sales ⁽¹⁾	(3,949)	—	(985)	(13,105)
Settlements ⁽¹⁾	(279,495)	—	(39,494)	(98,918)
Transfers into Level 3	15,455	343,144	2,853	13,542
Transfers out of Level 3	(20,556)	—	(66,113)	(402,707)
Fair value, end of period	\$ 1,226,970	\$ 416,076	\$ 330,649	\$ 303,836
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period				
Included in earnings, net:				
Investment income, net of related expenses	\$ (3,396)	\$ 2,788	\$ (1,753)	\$ 2,465
Investment related gains (losses), net	(2,278)	—	—	—

For the year ended December 31, 2015 (continued):

	Fixed maturity securities - available-for-sale			
	Commercial mortgage-backed securities	U.S. government and agencies	State and political subdivisions	Other foreign government, supranational and foreign government-sponsored enterprises
Fair value, beginning of period	\$ 86,746	\$ 28,529	\$ 42,711	\$ 19,663
Total gains/losses (realized/unrealized)				
Included in earnings, net:				
Investment income, net of related expenses	2,817	(48)	32	—
Investment related gains (losses), net	(4,737)	(233)	(19)	—
Included in other comprehensive income	(337)	(602)	(3,055)	(7)
Purchases ⁽¹⁾	42	544	—	—
Sales ⁽¹⁾	(6,153)	—	—	—
Settlements ⁽¹⁾	(7,226)	(1,925)	(492)	(1,258)
Transfers into Level 3	12,828	—	—	—
Transfers out of Level 3	(15,417)	—	(835)	(4,333)
Fair value, end of period	\$ 68,563	\$ 26,265	\$ 38,342	\$ 14,065
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period				
Included in earnings, net:				
Investment income, net of related expenses	\$ 2,718	\$ (48)	\$ 32	\$ —
Investment related gains (losses), net	(3,593)	—	—	—

For the year ended December 31, 2015 (continued):

	Funds withheld at interest-embedded derivatives	Other invested assets - non-redeemable preferred stock	Other assets - longevity swaps	Interest sensitive contract liabilities embedded derivatives	Other liabilities - mortality swaps
	Fair value, beginning of period	\$ 22,094	\$ 7,904	\$ 7,727	\$ (1,085,166)
Total gains/losses (realized/unrealized)					
Included in earnings, net:					
Investment related gains (losses), net	(98,792)	—	—	(33,191)	—
Interest credited	—	—	—	19,440	—
Included in other comprehensive income	—	(412)	(959)	—	—
Other revenue	—	—	8,228	—	(1,822)
Purchases ⁽¹⁾	—	4,529	—	(42,798)	—
Settlements ⁽¹⁾	—	—	—	71,131	—
Transfers out of Level 3	—	(12,021)	—	—	—
Fair value, end of period	\$ (76,698)	\$ —	\$ 14,996	\$ (1,070,584)	\$ (2,619)
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period					
Included in earnings, net:					
Investment related gains (losses), net	\$ (98,792)	\$ —	\$ —	\$ (43,496)	\$ —
Other revenue	—	—	8,228	—	(1,822)
Interest credited	—	—	—	(51,691)	—

(1) The amount reported within purchases, sales and settlements is the purchase price (for purchases) and the sales/settlement proceeds (for sales and settlements) based upon the actual date purchased or sold/settled. Items purchased and sold/settled in the same period are excluded from the rollforward. The Company had no issuances during the period.

The tables below provide a summary of the changes in fair value of Level 3 assets and liabilities for the year ended December 31, 2014, as well as the portion of gains or losses included in income for the year ended December 31, 2014 attributable to unrealized gains or losses related to those assets and liabilities still held at December 31, 2014 (dollars in thousands).

For the year ended December 31, 2014:

	Fixed maturity securities - available-for-sale					
	Corporate securities	Residential mortgage-backed securities	Asset-backed securities	Commercial mortgage-backed securities	U.S. government and agencies	State and political subdivisions
Fair value, beginning of period	\$ 1,345,289	\$ 153,505	\$ 471,848	\$ 101,785	\$ 40,919	\$ 43,776
Total gains/losses (realized/unrealized)						
Included in earnings, net:						
Investment income, net of related expenses	(4,828)	(93)	7,929	1,892	(483)	39
Investment related gains (losses), net	(1,984)	(244)	2,131	103	(401)	(17)
Included in other comprehensive income	(3,100)	1,748	1,665	1,099	1,052	3,282
Purchases ⁽¹⁾	356,706	54,412	191,662	6,180	581	—
Sales ⁽¹⁾	(54,386)	(744)	(22,923)	(14,626)	—	—
Settlements ⁽¹⁾	(273,392)	(34,727)	(54,175)	(3,599)	(13,139)	(738)
Transfers into Level 3	13,180	15,981	11,614	5,712	—	—
Transfers out of Level 3	(67,058)	(1,744)	(36,791)	(11,800)	—	(3,631)
Fair value, end of period	\$ 1,310,427	\$ 188,094	\$ 572,960	\$ 86,746	\$ 28,529	\$ 42,711
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period						
Included in earnings, net:						
Investment income, net of related expenses	\$ (4,686)	\$ (97)	\$ 5,306	\$ 1,949	\$ (480)	\$ 39

For the year ended December 31, 2014 (continued):

	Fixed maturity securities - available-for-sale	Other foreign government, supranational and foreign government-sponsored enterprises	Funds withheld at interest-embedded derivatives	Other invested assets - non-redeemable preferred stock	Other assets - longevity swaps	Interest sensitive contract liabilities embedded derivatives	Other liabilities - mortality swaps
Fair value, beginning of period	\$ 37,997	\$ (176,270)	\$ 4,962	\$ —	\$ (868,725)	\$ —	
Total gains/losses (realized/unrealized)							
Included in earnings, net:							
Investment income, net of related expenses	(5)	—	—	—	—	—	
Investment related gains (losses), net	—	198,364	—	—	(129,224)	—	
Interest credited	—	—	—	—	(104,843)	—	
Included in other comprehensive income	(59)	—	(96)	(361)	—	—	
Other revenue	—	—	—	8,088	—	(797)	
Purchases ⁽¹⁾	—	—	8,000	—	(56,234)	—	
Settlements ⁽¹⁾	(1,210)	—	—	—	—	—	
Transfers into Level 3	9,482	—	—	—	73,860	—	
Transfers out of Level 3	(26,542)	—	(4,962)	—	—	—	
Fair value, end of period	\$ 19,663	\$ 22,094	\$ 7,904	\$ 7,727	\$ (1,085,166)	\$ (797)	
Unrealized gains and losses recorded in earnings for the period relating to those Level 3 assets and liabilities that were still held at the end of the period							
Included in earnings, net:							
Investment income, net of related expenses	\$ (5)	\$ —	\$ —	\$ —	\$ —	\$ —	
Investment related gains (losses), net	—	—	—	—	(134,254)	—	
Other revenue	—	—	—	8,088	—	(797)	
Interest credited	—	198,365	—	—	(178,704)	—	

(1) The amount reported within purchases, sales and settlements is the purchase price (for purchases) and the sales/settlement proceeds (for sales and settlements) based upon the actual date purchased or sold/settled. Items purchased and sold/settled in the same period are excluded from the rollforward. The Company had no issuances during the period.

Nonrecurring Fair Value Measurements

The following table presents information for assets measured at estimated fair value on a nonrecurring basis during the periods presented and still held at the reporting dates (for example, when there is evidence of impairment). The estimated fair values for these assets were determined using significant unobservable inputs.

(dollars in thousands)	Carrying Value After Measurement		Net Investment Gains (Losses)	
	At December 31,		Years ended December 31,	
	2016	2015	2016	2015
Mortgage loans ⁽¹⁾	\$ —	\$ 11,800	\$ —	\$ 228
Limited partnership interests ⁽²⁾	6,192	12,520	(9,277)	(6,550)

(1) Estimated fair values for impaired mortgage loans are based on internal valuation models using unobservable inputs or, if the loans are in foreclosure or are otherwise determined to be collateral dependent, are based on external appraisals of the underlying collateral.

(2) The impaired limited partnership interests presented above were accounted for using the cost method. Impairments on these cost method investments were recognized at estimated fair value determined using the net asset values of the Company's ownership interest as provided in the financial statements of the investees. The market for these investments has limited activity and price transparency.

Fair Value of Financial Instruments

The Company is required by general accounting principles for *Fair Value Measurements and Disclosures* to disclose the fair value of certain financial instruments including those that are not carried at fair value. The following table presents the carrying amounts and estimated fair values of the Company's financial instruments, which were not measured at fair value on a recurring basis, at December 31, 2016 and December 31, 2015 (dollars in thousands). This table excludes any payables or receivables for collateral

under repurchase agreements and other transactions. The estimated fair value of the excluded amount approximates carrying value as they equal the amount of cash collateral received/paid.

December 31, 2016:	Carrying Value	Estimated Fair Value	Fair Value Measurement Using:				
			Level 1	Level 2	Level 3	NAV	
Assets:							
Mortgage loans on real estate	\$ 3,775,522	\$ 3,786,987	\$ —	\$ —	\$ 3,786,987	\$ —	
Policy loans	1,427,602	1,427,602	—	1,427,602	—	—	
Funds withheld at interest ⁽¹⁾	5,893,381	6,193,166	—	—	6,193,166	—	
Cash and cash equivalents ⁽²⁾	862,117	862,117	862,117	—	—	—	
Short-term investments ⁽²⁾	32,469	32,469	32,469	—	—	—	
Other invested assets ⁽²⁾	477,132	510,640	26,294	55,669	131,904	296,773	
Accrued investment income	347,173	347,173	—	347,173	—	—	
Liabilities:							
Interest-sensitive contract liabilities ⁽¹⁾	\$ 10,225,099	\$ 10,234,544	\$ —	\$ —	\$ 10,234,544	\$ —	
Long-term debt	3,088,635	3,186,173	—	—	3,186,173	—	
Collateral finance and securitization notes	840,700	745,805	—	—	745,805	—	
December 31, 2015:							
Assets:							
Mortgage loans on real estate	\$ 3,129,951	\$ 3,197,808	\$ —	\$ —	\$ 3,197,808	\$ —	
Policy loans	1,468,796	1,468,796	—	1,468,796	—	—	
Funds withheld at interest ⁽¹⁾	5,956,380	6,311,780	—	—	6,311,780	—	
Cash and cash equivalents ⁽²⁾	1,118,754	1,118,754	1,118,754	—	—	—	
Short-term investments ⁽²⁾	27,511	27,511	27,511	—	—	—	
Other invested assets ⁽²⁾	399,799	444,342	4,445	34,886	111,412	293,599	
Accrued investment income	339,452	339,452	—	339,452	—	—	
Liabilities:							
Interest-sensitive contract liabilities ⁽¹⁾	\$ 9,746,870	\$ 9,841,576	\$ —	\$ —	\$ 9,841,576	\$ —	
Long-term debt	2,297,548	2,415,119	—	—	2,415,119	—	
Collateral finance and securitization notes	899,161	791,275	—	—	791,275	—	

(1) Carrying values presented herein differ from those presented in the consolidated balance sheets because certain items within the respective financial statement caption are embedded derivatives and are measured at fair value on a recurring basis.

(2) Carrying values presented herein differ from those presented in the consolidated balance sheets because certain items within the respective financial statement caption are measured at fair value on a recurring basis.

Mortgage Loans on Real Estate – The fair value of mortgage loans on real estate is estimated by discounting cash flows, both principal and interest, using current interest rates for mortgage loans with similar credit ratings and similar remaining maturities. As such, inputs include current treasury yields and spreads, which are based on the credit rating and average life of the loan, corresponding to the market spreads. The valuation of mortgage loans on real estate is considered Level 3 in the fair value hierarchy.

Policy Loans – Policy loans typically carry an interest rate that is adjusted annually based on an observable market index and therefore carrying value approximates fair value. The valuation of policy loans is considered Level 2 in the fair value hierarchy.

Funds Withheld at Interest – The carrying value of funds withheld at interest approximates fair value except where the funds withheld are specifically identified in the agreement. When funds withheld are specifically identified in the agreement, the fair value is based on the fair value of the underlying assets which are held by the ceding company. Ceding companies use a variety of sources and pricing methodologies, which are not transparent to the Company and may include significant unobservable inputs, to value the securities that are held in distinct portfolios, therefore the valuation of these funds withheld assets are considered Level 3 in the fair value hierarchy.

Cash and Cash Equivalents and Short-term Investments – The carrying values of cash and cash equivalents and short-term investments approximates fair values due to the short-term maturities of these instruments and are considered Level 1 in the fair value hierarchy.

Other Invested Assets – This primarily includes limited partnership interests accounted for using the cost method, structured loans, FHLB common stock, cash collateral and equity release mortgages. The fair value of limited partnership interests and other investments accounted for using the cost method is determined using the NAV of the Company’s ownership interest as provided in the financial statements of the investees. The fair value of structured loans is estimated based on a discounted cash flow analysis using discount rates applicable to each structured loan, this is considered Level 3 in the fair value hierarchy. The fair value of the Company’s common stock investment in the FHLB is considered to be the carrying value and it is considered Level 2 in the fair value hierarchy. The fair value of the Company’s cash collateral is considered to be the carrying value and considered to be Level 1 in the fair value hierarchy. The fair value of the Company’s equity release mortgage loan portfolio, considered Level 3 in the fair value hierarchy, is estimated by discounting cash flows, both principal and interest, using a risk free rate plus an illiquidity premium. The cash flow analysis considers future expenses, changes in property prices, and actuarial analysis of borrower behavior, mortality and morbidity.

Accrued Investment Income – The carrying value for accrued investment income approximates fair value as there are no adjustments made to the carrying value. This is considered Level 2 in the fair value hierarchy.

Interest-Sensitive Contract Liabilities – The carrying and fair values of interest-sensitive contract liabilities reflected in the table above exclude contracts with significant mortality risk. The fair value of the Company’s interest-sensitive contract liabilities utilizes a market standard technique with both capital market inputs and policyholder behavior assumptions, as well as cash values adjusted for recapture fees. The capital market inputs to the model, such as interest rates, are generally observable. Policyholder behavior assumptions are generally not observable and may require use of significant management judgment. The valuation of interest-sensitive contract liabilities is considered Level 3 in the fair value hierarchy.

Long-term Debt/Collateral Finance and Securitization Notes – The fair value of the Company’s long-term debt, and collateral finance and securitization notes is generally estimated by discounting future cash flows using market rates currently available for debt with similar remaining maturities and reflecting the credit risk of the Company, including inputs when available, from actively traded debt of the Company or other companies with similar credit quality. The valuation of long-term debt, and collateral finance and securitization notes is generally obtained from brokers and is considered Level 3 in the fair value hierarchy.

Note 7 REINSURANCE

In the normal course of business, the Company seeks to limit its exposure to loss on any single insured and to recover a portion of benefits paid by ceding reinsurance to other insurance enterprises or reinsurers under excess coverage and coinsurance contracts. In the individual life markets, the Company retains a maximum of \$8.0 million of coverage per individual life. Claims in excess of this retention amount are retroceded to retrocessionaires; however, the Company remains fully liable to the ceding company for the entire amount of risk it assumes. In certain limited situations the Company has retained more than \$8.0 million per individual policy. The Company enters into agreements with other reinsurers to mitigate the residual risk related to the over-retained policies. Additionally, due to some lower face amount reinsurance coverage provided by the Company in addition to individual life, such as group life, disability and health, under certain circumstances, the Company could potentially incur net claims totaling more than \$8.0 million per individual life.

Retrocession reinsurance treaties do not relieve the Company from its obligations to direct writing companies. Failure of retrocessionaires to honor their obligations could result in losses to the Company. Consequently, allowances would be established for amounts deemed uncollectible. At December 31, 2016 and 2015, no allowances were deemed necessary. The Company regularly evaluates the financial condition of the insurance companies from which it assumes and to which it cedes reinsurance.

Retrocessions are arranged through the Company’s retrocession pools for amounts in excess of the Company’s retention limit. As of December 31, 2016 and 2015, all rated retrocession pool participants followed by the A.M. Best Company were rated “A- (excellent)” or better. The Company verifies retrocession pool participants’ ratings on a quarterly basis. For a majority of the retrocessionaires that were not rated, security in the form of letters of credit or trust assets has been posted. In addition, the Company performs annual financial reviews of its retrocessionaires to evaluate financial stability and performance. In addition to its third party retrocessionaires, various RGA reinsurance subsidiaries retrocede amounts in excess of their retention to affiliated subsidiaries.

The following table presents information for the Company's ceded reinsurance receivable assets, including the respective amount and A.M. Best rating for each reinsurer representing in excess of five percent of the total as of December 31, 2016 and 2015 (dollars in thousands):

Reinsurer	A.M. Best Rating	2016		2015	
		Amount	% of Total	Amount	% of Total
Reinsurer A	A+	\$ 240,894	35.2%	\$ 199,479	31.3%
Reinsurer B	A+	183,881	26.9	179,522	28.1
Reinsurer C	A+	68,832	10.1	72,836	11.4
Reinsurer D	A++	36,202	5.3	41,807	6.6
Reinsurer E	A	35,484	5.2	37,138	5.8
Other reinsurers		118,679	17.3	107,077	16.8
Total		\$ 683,972	100.0%	\$ 637,859	100.0%

Included in the total ceded reinsurance receivables balance were \$242.0 million and \$233.7 million of claims recoverable, of which \$4.0 million and \$2.0 million were in excess of 90 days past due, as of December 31, 2016 and 2015, respectively.

The effect of reinsurance on net premiums is as follows (dollars in thousands):

Years ended December 31,	2016	2015	2014
Direct	\$ 57,562	\$ 43,106	\$ 19,365
Reinsurance assumed	10,049,587	9,371,308	9,098,378
Reinsurance ceded	(858,278)	(843,673)	(447,889)
Net premiums	\$ 9,248,871	\$ 8,570,741	\$ 8,669,854

The effect of reinsurance on claims and other policy benefits as follows (dollars in thousands):

Years ended December 31,	2016	2015	2014
Direct	\$ 105,435	\$ 82,942	\$ 32,564
Reinsurance assumed	8,621,647	8,205,308	7,805,984
Reinsurance ceded	(733,707)	(798,868)	(431,907)
Net claims and other policy benefits	\$ 7,993,375	\$ 7,489,382	\$ 7,406,641

The effect of reinsurance on life insurance in force is shown in the following schedule (dollars in millions):

	Direct	Assumed	Ceded	Net	Assumed/Net %
December 31, 2016	\$ 1,576	\$ 3,062,525	\$ 214,727	\$ 2,849,374	107.5%
December 31, 2015	1,686	2,995,079	222,388	2,774,377	108.0
December 31, 2014	78	2,943,517	230,544	2,713,051	108.5

At December 31, 2016 and 2015, respectively, the Company provided approximately \$10.8 billion and \$8.8 billion of financial reinsurance, as measured by pre-tax statutory surplus, risk based capital and other financial reinsurance structures, to other insurance companies under financial reinsurance transactions to assist ceding companies in meeting applicable regulatory requirements. Generally, such financial reinsurance is provided by the Company committing cash or assuming insurance liabilities, which are collateralized by future profits on the reinsured business. The Company earns a fee based on the amount of net outstanding financial reinsurance.

Reinsurance agreements, whether facultative or automatic, may provide for recapture rights on the part of the ceding company. Recapture rights permit the ceding company to reassume all or a portion of the risk formerly ceded to the reinsurer after an agreed-upon period of time, generally 10 years, or in some cases due to changes in the financial condition or ratings of the reinsurer. Recapture of business previously ceded does not affect premiums ceded prior to the recapture of such business, but would reduce premiums in subsequent periods. Additionally, some treaties give the ceding company the right to request the Company to place assets in trust for their benefit to support their reserve credits, in the event of a downgrade of the Company's ratings to specified levels, generally non-investment grade levels, or if minimum levels of financial condition are not maintained. As of December 31, 2016 and 2015, these treaties had approximately \$1,935.0 million and \$1,656.9 million, respectively, in statutory reserves. Assets placed in trust continue to be owned by the Company, but their use is restricted based on the terms of the trust agreement. Securities with an amortized cost of \$2,372.1 million and \$1,638.0 million were held in trust to satisfy collateral requirements for reinsurance business for the benefit of certain RGA subsidiaries at December 31, 2016 and 2015, respectively. In addition, the Company's collateral financing operations have asset in trust requirements. See Note 14 – "Collateral Finance and Securitization Notes" for additional information. Securities with an amortized cost of \$12,135.3 million and \$10,535.7 million, as of December 31, 2016 and 2015, respectively, were held in trust to satisfy collateral requirements under certain third-party reinsurance treaties. Under

certain conditions, RGA may be obligated to move reinsurance from one RGA subsidiary company to another or make payments under the treaty. These conditions include change in control or ratings of the subsidiary, insolvency, nonperformance under a treaty, or loss of reinsurance license of such subsidiary.

Note 8 DEFERRED POLICY ACQUISITION COSTS

The following reflects the amounts of policy acquisition costs deferred and amortized (dollars in thousands):

Years ended December 31,	2016	2015	2014
Balance, beginning of year	\$ 3,392,437	\$ 3,342,575	\$ 3,517,796
Capitalization	350,233	352,260	877,609
Amortization (including interest)	(341,115)	(288,630)	(867,621)
Change in value of embedded derivatives	(40,077)	58,754	(111,744)
Attributed to unrealized investment gains (losses)	(3,541)	17,510	(4,480)
Foreign currency translation	(19,332)	(90,032)	(68,985)
Balance, end of year	\$ 3,338,605	\$ 3,392,437	\$ 3,342,575

Some reinsurance agreements involve reimbursing the ceding company for allowances and commissions in excess of first-year premiums. These amounts represent acquisition costs and are capitalized to the extent deemed recoverable from the future premiums and amortized against future profits of the business. This type of agreement presents a risk to the extent that the business lapses faster than originally anticipated, resulting in future profits being insufficient to recover the Company's investment. Prior to 2015, certain renewal commissions that were capitalized and amortized in the same period were reflected in the table above. During 2015, the Company enhanced its process to track certain DAC roll forward component items, in particular, capitalization and amortization of certain renewal commissions have been excluded from the table above. Had the current methodology been used in 2014, the amounts capitalized and amortized would have decreased by \$437.9 million.

Note 9 INCOME TAX

Pre-tax income for the years ended December 31, 2016, 2015 and 2014 consists of the following (dollars in thousands):

	2016	2015	2014
Pre-tax income - U.S.	\$ 758,496	\$ 493,328	\$ 768,857
Pre-tax income - foreign	285,450	251,467	239,676
Total pre-tax income	\$ 1,043,946	\$ 744,795	\$ 1,008,533

The provision for income tax expense for the years ended December 31, 2016, 2015 and 2014 consists of the following (dollars in thousands):

	2016	2015	2014
Current income tax expense (benefit):			
U.S.	\$ 1,020	\$ 1,588	\$ 18,495
Foreign	47,706	92,045	135,260
Total current	48,726	93,633	153,755
Deferred income tax expense (benefit):			
U.S.	273,928	193,204	242,694
Foreign	19,849	(44,208)	(71,963)
Total deferred	293,777	148,996	170,731
Total provision for income taxes	\$ 342,503	\$ 242,629	\$ 324,486

Provision for income tax expense differed from the amounts computed by applying the U.S. federal income tax statutory rate of 35% to pre-tax income as a result of the following for the years ended December 31, 2016, 2015 and 2014 (dollars in thousands):

	2016	2015	2014
Tax provision at U.S. statutory rate	\$ 365,381	\$ 260,678	\$ 352,987
Increase (decrease) in income taxes resulting from:			
Foreign tax rate differing from U.S. tax rate	(13,974)	(9,950)	(12,483)
Differences in tax basis in foreign jurisdictions	(17,770)	(32,472)	(8,256)
Deferred tax valuation allowance	10,963	19,157	2,076
Amounts related to tax audit contingencies	111	88	(9,083)
Corporate rate changes - other	—	—	280
Subpart F	1,783	3,473	6,132
Foreign tax credits	(1,683)	(1,936)	(1,045)
Return to provision adjustments	(1,473)	1,482	(8,123)
Other, net	(835)	2,109	2,001
Total provision for income taxes	\$ 342,503	\$ 242,629	\$ 324,486
Effective tax rate	32.8%	32.6%	32.2%

Total income taxes for the years ended December 31, 2016, 2015 and 2014 were as follows (dollars in thousands):

	2016	2015	2014
Provision for income taxes	\$ 342,503	\$ 242,629	\$ 324,486
Income tax from OCI and additional paid-in-capital:			
Net unrealized holding gain (loss) on debt and equity securities recognized for financial reporting purposes	157,929	(339,889)	348,697
Exercise of stock options	(162)	(2,963)	3,011
Foreign currency translation	21,081	16,478	22,998
Unrealized pension and post retirement	1,772	1,726	(14,770)
Total income taxes provided	\$ 523,123	\$ (82,019)	\$ 684,422

The tax effects of temporary differences that give rise to significant portions of the deferred income tax asset and liabilities at December 31, 2016 and 2015, are presented in the following tables (dollars in thousands):

	2016	2015
Deferred income tax assets:		
Non deductible accruals	\$ 125,879	\$ 116,106
Differences between tax and financial reporting amounts concerning certain reinsurance transactions	87,688	63,543
Differences in the tax basis of cash and invested assets	775	5,931
Investment income differences	35,192	—
Deferred acquisition costs capitalized for tax	143,003	131,714
Net operating loss carryforward	325,806	524,501
Capital loss and tax credit carryforwards	101,223	77,888
Subtotal	819,566	919,683
Valuation allowance	(133,354)	(127,132)
Total deferred income tax assets	686,212	792,551
Deferred income tax liabilities:		
Deferred acquisition costs capitalized for financial reporting	1,013,642	1,011,753
Differences between tax and financial reporting amounts concerning certain reinsurance transactions	1,773,929	1,509,211
Differences in the tax basis of cash and invested assets	505,841	336,870
Investment income differences	5,635	14,654
Differences in foreign currency translation	91,067	81,492
Prepaid expenses	—	1,014
Total deferred income tax liabilities	3,390,114	2,954,994
Net deferred income tax liabilities	\$ 2,703,902	\$ 2,162,443
Balance sheet presentation of net deferred income tax liabilities:		
Included in other assets	\$ 66,738	\$ 55,885
Included in deferred income taxes	2,770,640	2,218,328
Net deferred income tax liabilities	\$ 2,703,902	\$ 2,162,443

As of December 31, 2016, a valuation allowance for deferred tax assets of approximately \$133.4 million was provided on the total deferred tax assets in certain jurisdictions. The valuation allowance is primarily related to numerous branches and legal entities for which there is no history of earnings in recent years. Further there is a partial valuation allowance on RGA Reinsurance Company of South Africa, Limited (“RGA South Africa”), RGA Reinsurance Company of Australia Limited (“RGA Australia”) and Aurora National net operating losses as well as RGA International Reinsurance Company dac (“RGA International”) foreign

tax credit. As of December 31, 2015, a valuation allowance for deferred tax assets of approximately \$127.1 million was provided on the total deferred tax assets. The valuation allowance is primarily related to numerous branches and legal entities for which there is no history of earnings in recent years. Further there is a partial valuation allowance on RGA South Africa and RGA Australia's net operating losses, RGA International's foreign tax credit and on RGA's deferred tax asset related to share expense for foreign entities. The Company utilizes valuation allowances when it believes, based on the weight of the available evidence, that it is more likely than not that the deferred income tax asset will not be utilized.

The earnings of substantially all of the Company's foreign subsidiaries have been permanently reinvested in foreign operations. A provision of \$4.2 million has been made for U.S. taxes on repatriation. No other provision has been made for U.S. tax or foreign withholding taxes that may be applicable upon any repatriation or sale. The determination of the unrecognized deferred tax liability for temporary differences related to investments in the Company's foreign subsidiaries is not practicable. At December 31, 2016 and 2015, the financial reporting basis in excess of the tax basis for which no deferred taxes have been recognized was approximately \$1,147.2 million and \$992.9 million, respectively.

During 2016, 2015 and 2014, the Company received federal and foreign income tax refunds of approximately \$6.9 million, \$136.8 million and \$9.3 million, respectively. The Company made cash income tax payments of approximately \$68.0 million, \$178.4 million and \$79.6 million in 2016, 2015 and 2014, respectively. At December 31, 2016 and 2015, the Company recognized gross deferred tax assets associated with net operating losses of approximately \$1,353.6 million and \$1,771.0 million, respectively. The earliest expiration date for any significant net operating losses that do not have a valuation allowance is 2028, during which \$50.3 million of net operating losses would expire if not utilized. The remaining net operating losses have either a valuation allowance or indefinite carryforward periods. At December 31, 2016 and 2015, the Company also recognized a deferred tax asset associated with tax credits of \$100.9 million and \$77.5 million, respectively. The earliest expiration date for the tax credits is 2023 during which \$19.7 million would expire if not utilized. However, these net operating losses and tax credits, other than the net operating losses and tax credits for which there is a valuation allowance, are expected to be utilized in the normal course of business during the period allowed for carryforwards and in any event, are not expected to be lost, due to the application of tax planning strategies that the Company would utilize.

The Company files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. The Company is under continuous examination by the Internal Revenue Service and is subject to audit by taxing authorities in other foreign jurisdictions in which the Company has significant business operations. The income tax years under examination vary by jurisdiction. The Company is no longer subject to U.S. federal income tax examinations by tax authorities for years prior to 2011 and with a few exceptions, the Company is no longer subject to state and foreign income tax examinations by tax authorities for years prior to 2010.

As of December 31, 2016, the Company's total amount of unrecognized tax benefits was \$297.3 million and the total amount of unrecognized tax benefits that would affect the effective tax rate, if recognized, was \$30.3 million. Management believes there will be no material impact to the Company's effective tax rate related to unrecognized tax benefits over the next 12 months.

A reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31, 2016, 2015 and 2014, is as follows (dollars in thousands):

	Total Unrecognized Tax Benefits		
	2016	2015	2014
Beginning balance, January 1	\$ 296,213	\$ 274,661	\$ 279,801
Additions for tax positions of prior years	226,720	26,170	17,431
Reductions for tax positions of prior years	(229,719)	(7,820)	(26,001)
Additions for tax positions of current year	4,186	3,396	3,430
Settlements with tax authorities	(110)	(194)	—
Ending balance, December 31	\$ 297,290	\$ 296,213	\$ 274,661

The Company recognized interest expense (benefit) associated with uncertain tax positions in 2016, 2015 and 2014 of \$(8.4) million, \$8.2 million and \$(36.6) million, respectively. Additionally, the Company recognized penalties of \$0.3 million for 2016. As of December 31, 2016 and 2015, the Company had \$20.4 million and \$28.8 million, respectively, of accrued interest related to unrecognized tax benefits.

Note 10 EMPLOYEE BENEFIT PLANS

Certain subsidiaries of the Company are sponsors or administrators of both qualified and non-qualified defined benefit pension plans ("Pension Plans"). The largest of these plans is a non-contributory qualified defined benefit pension plan sponsored by RGA Reinsurance that covers U.S. employees. The benefits under the Pension Plans are generally based on years of service and compensation levels.

The Company also provides select health care and life insurance benefits for certain retired employees. The health care benefits are provided through a self-insured welfare benefit plan. Employees become eligible for these benefits if they meet minimum age

and service requirements. The retiree's cost for health care benefits varies depending upon the credited years of service. The Company recorded benefits expense of approximately \$6.3 million, \$9.1 million, and \$5.4 million in 2016, 2015 and 2014, respectively, that are related to these postretirement plans. Effective January 1, 2017, employees hired in the U. S. are not eligible for retiree health care benefits. Virtually all retirees, or their beneficiaries, contribute a portion of the total cost of postretirement health benefits. Prepaid benefit costs and accrued benefit liabilities are included in other assets and other liabilities, respectively, in the Company's consolidated balance sheets.

A December 31 measurement date is used for all of the defined benefit and postretirement plans. The status of these plans as of December 31, 2016 and 2015 is summarized below (dollars in thousands):

	December 31,			
	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Change in benefit obligation:				
Benefit obligation at beginning of year	\$ 142,239	\$ 138,196	\$ 63,307	\$ 59,782
Service cost	10,319	9,222	2,883	4,062
Interest Cost	4,790	5,035	2,259	2,572
Participant contributions	—	—	305	229
Amendments ⁽¹⁾	—	—	(13,743)	—
Actuarial (gains) losses	9,973	(1,919)	6,228	(2,729)
Settlement (gains) losses	258	—	—	—
Settlements	(3,152)	—	—	—
Benefits paid	(3,047)	(4,480)	(715)	(609)
Foreign exchange translations and other adjustments	575	(3,815)	—	—
Benefit obligation at end of year	\$ 161,955	\$ 142,239	\$ 60,524	\$ 63,307

(1) Reflects effect of the amendment to RGA's U.S. retiree health care benefit plan announced in 2016, effective January 1, 2017. The amount was recorded in AOCI and will be amortized through prior service cost.

	December 31,			
	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Change in plan assets:				
Fair value of plan assets at beginning of year	\$ 68,435	\$ 66,757	\$ —	\$ —
Actual return on plan assets	6,584	(2,795)	—	—
Employer contributions	15,950	8,953	410	380
Participant contributions	—	—	305	229
Disbursement for settlements	(3,152)	—	—	—
Benefits paid and expenses	(3,047)	(4,480)	(715)	(609)
Fair value of plan assets at end of year	\$ 84,770	\$ 68,435	\$ —	\$ —
Funded status at end of year	\$ (77,185)	\$ (73,804)	\$ (60,524)	\$ (63,307)

	December 31,					
	Qualified Plans		Non-Qualified Plans ⁽¹⁾		Total	
	2016	2015	2016	2015	2016	2015
Aggregate fair value of plan assets	\$ 84,770	\$ 68,435	\$ —	\$ —	\$ 84,770	\$ 68,435
Aggregate projected benefit obligations	96,418	83,870	65,537	58,369	161,955	142,239
Under funded	\$ (11,648)	\$ (15,435)	\$ (65,537)	\$ (58,369)	\$ (77,185)	\$ (73,804)

(1) For non-qualified plans, there are no required funding levels.

	December 31,			
	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Amounts recognized in accumulated other comprehensive income:				
Net actuarial loss	\$ 46,119	\$ 41,814	\$ 32,156	\$ 27,755
Net prior service cost (credit)	703	1,159	(13,121)	—
Total	\$ 46,822	\$ 42,973	\$ 19,035	\$ 27,755

The following table presents information for qualified and non-qualified pension plans with a projected benefit obligation in excess of plan assets as of December 31, 2016 and 2015 (dollars in thousands):

	2016		2015	
Projected benefit obligation	\$	161,955	\$	142,239
Fair value of plan assets		84,770		68,435

The accumulated benefit obligations for all defined benefit pension plans were \$158.6 million and \$140.4 million at December 31, 2016 and 2015, respectively. The following table presents information for pension plans with an accumulated benefit obligation in excess of plan assets as of December 31, 2016 and 2015 (dollars in thousands):

	2016		2015	
Accumulated benefit obligation	\$	158,580	\$	140,442
Fair value of plan assets		84,770		68,435

The components of net periodic benefit cost and other changes in plan assets and benefit obligations recognized in other comprehensive income were as follows (dollars in thousands):

	Pension Benefits			Other Benefits		
	2016	2015	2014	2016	2015	2014
Net periodic benefit cost:						
Service cost	\$ 10,319	\$ 9,222	\$ 8,121	\$ 2,883	\$ 4,062	\$ 2,354
Interest cost	4,790	5,035	4,972	2,259	2,572	1,962
Expected return on plan assets	(5,138)	(4,897)	(4,471)	—	—	—
Amortization of prior actuarial losses	4,323	3,429	1,755	1,827	2,465	1,060
Amortization of prior service cost (credit)	294	309	333	(622)	—	—
Settlements	1,026	—	—	—	—	—
Net periodic benefit cost	15,614	13,098	10,710	6,347	9,099	5,376

Other changes in plan assets and benefit obligations recognized in other comprehensive income:						
Net actuarial (gains) losses	8,785	5,774	20,912	6,228	(2,729)	25,354
Amortization of actuarial (gains) losses	(4,323)	(3,429)	(1,755)	(1,827)	(2,465)	(1,060)
Amortization of prior service cost (credit)	(294)	(309)	(333)	622	—	—
Settlements	(1,026)	—	—	—	—	—
Prior service cost (credit) ⁽¹⁾	—	—	—	(13,743)	—	—
Foreign exchange translations and other adjustments	707	(1,797)	(578)	—	—	—
Total recognized in other comprehensive income	3,849	239	18,246	(8,720)	(5,194)	24,294
Total recognized in net periodic benefit cost and other comprehensive income	\$ 19,463	\$ 13,337	\$ 28,956	\$ (2,373)	\$ 3,905	\$ 29,670

(1) Reflects effect of the amendment to RGA's U.S. retiree health care benefit plan announced in 2016, effective January 1, 2017. The amount was recorded in AOCI and will be amortized through prior service cost.

During 2017, the Company expects to contribute \$15.1 million and \$5.1 million to the pension plans and other benefit plans, respectively.

The following benefit payments, which reflect expected future service as appropriate, are expected to be paid (dollars in thousands):

	Pension Benefits		Other Benefits	
2017	\$	8,944	\$	1,132
2018		8,709		1,387
2019		11,467		1,650
2020		10,250		1,977
2021		10,474		2,327
2022-2026		63,526		16,374

The estimated net loss and prior service cost for the defined benefit pension plans and post-retirement plans that will be amortized from accumulated other comprehensive income into net periodic benefit cost over the next fiscal year are \$4.1 million and \$0.8 million, respectively.

Assumptions

Weighted average assumptions used to determine the accumulated benefit obligation and net benefit cost or income were as follows:

	Pension Benefits			Other Benefits		
	2016	2015	2014	2016	2015	2014
Discount rate used to determine benefit obligation	3.80%	3.99%	3.90%	4.10%	4.43%	4.05%
Discount rate used to determine net benefit cost or income	3.95%	3.77%	4.30%	4.43%	4.05%	5.05%
Expected long-term rate of return on plan assets	7.35%	7.35%	7.35%	—%	—%	—%
Rate of compensation increases	4.08%	4.08%	4.08%	—%	—%	—%

The expected rate of return on plan assets is based on anticipated performance of the various asset sectors in which the plan invests, weighted by target allocation percentages. Anticipated future performance is based on long-term historical returns of the plan assets by sector, adjusted for the long-term expectations on the performance of the markets. While the precise expected return derived using this approach may fluctuate from year to year, the policy is to hold this long-term assumption constant as long as it remains within reasonable tolerance from the derived rate. This process is consistent for all plan assets as all the assets are invested in mutual funds.

The assumed health care cost trend rates used in measuring the accumulated non-pension post-retirement benefit obligation were as follows:

	December 31,	
	2016	2015
Pre-Medicare eligible claims	10% down to 5% in 2024	8% down to 5% in 2020
Medicare eligible claims	10% down to 5% in 2024	8% down to 5% in 2020

Assumed health care cost trend rates may have a significant effect on the amounts reported for health care plans. A one-percentage point change in assumed health care cost trend rates would have the following effects (dollars in thousands):

	One Percent Increase		One Percent Decrease	
Effect on total of service and interest cost components	\$	7,394	\$	(6,606)
Effect on accumulated postretirement benefit obligation	\$	940	\$	(710)

Plan Assets

Target allocations of U.S. qualified pension plan assets are determined with the objective of maximizing returns and minimizing volatility of net assets through adequate asset diversification and partial liability immunization. Adjustments are made to target allocations based on the Company's assessment of the effect of economic factors and market conditions. The target allocations for plan assets are 60% equity securities and 40% debt securities as of December 31, 2016 and 2015. The Company's plan assets are primarily invested in mutual funds. The mutual funds include holdings of S&P 500 securities, large-cap securities, mid-cap securities, small-cap securities, international securities, corporate debt securities, U.S. and other government securities, mortgage-related securities and cash.

Equity and debt securities are exposed to various risks, such as interest rate risk, credit risk, and overall market volatility. Due to the level of risk associated with certain investment securities, changes in the values of investment securities will occur and any change would affect the amounts reported in the financial statements.

The fair values of the Company's qualified pension plan assets as of December 31, 2016 and 2015 are summarized below (dollars in thousands):

	December 31, 2016			
	Total	Fair Value Measurement Using:		
		Level 1	Level 2	Level 3
Mutual Funds ⁽¹⁾	\$ 84,671	\$ 84,671	\$ —	\$ —
Cash	99	99	—	—
Total	\$ 84,770	\$ 84,770	\$ —	\$ —

(1) Mutual funds were invested 28% in U.S. equity funds, 37% in U.S. fixed income funds, 20% in non-U.S. equity funds and 15% in other.

	December 31, 2015			
	Total	Fair Value Measurement Using:		
		Level 1	Level 2	Level 3
Mutual Funds ⁽²⁾	\$ 68,349	\$ 68,349	\$ —	\$ —
Cash	86	86	—	—
Total	\$ 68,435	\$ 68,435	\$ —	\$ —

(2) Mutual funds were invested 32% in U.S. equity funds, 38% in U.S. fixed income funds, 15% in non-U.S. equity funds and 15% in other.

As of December 31, 2016 and 2015, the Company classified all of its qualified pension plan assets in the Level 1 category as quoted prices in active markets are available for these assets. See Note 6 – “Fair Value of Asset and Liabilities” for additional detail on the fair value hierarchy.

Savings and Investment Plans

Certain subsidiaries of RGA also sponsor saving and investment plans under which a portion of employee contributions are matched. Subsidiary contributions to these plans, were \$9.9 million, \$9.0 million and \$7.8 million in 2016, 2015 and 2014, respectively.

Note 11 FINANCIAL CONDITION AND NET INCOME ON A STATUTORY BASIS – SIGNIFICANT SUBSIDIARIES

The domestic and foreign insurance subsidiaries of RGA prepare their statutory financial statements in conformity with statutory accounting practices prescribed or permitted by the applicable state insurance department or local regulatory authority, which vary materially from statements prepared in accordance with GAAP. Prescribed statutory accounting practices in the U.S. include publications of the National Association of Insurance Commissioners (“NAIC”), as well as state laws, local regulations and general administrative rules. The differences between statutory financial statements and financial statements prepared in accordance with GAAP vary between jurisdictions. The principal differences between GAAP and NAIC are that statutory financial statements do not reflect deferred policy acquisition costs and limit deferred tax assets, life benefit reserves predominately use interest rate and mortality assumptions prescribed by the NAIC and local regulatory agencies, bonds are generally carried at amortized cost and reinsurance assets and liabilities are presented net of reinsurance.

Statutory net income, and capital and surplus of the Company’s insurance subsidiaries, determined in accordance with statutory accounting practices prescribed by the applicable state insurance department or local regulatory authority are as follows (dollars in thousands):

	Statutory Capital & Surplus		Statutory Net Income (Loss)		
	2016	2015	2016	2015	2014
RGA Reinsurance (U.S.)	\$ 1,521,644	\$ 1,503,402	\$ 148,576	\$ (23,615)	\$ 17,085
Reinsurance Company of Missouri	1,651,274	1,598,328	272,038	51,041	126,326
RGA Life Reinsurance Company of Canada	915,134	874,151	13,947	113,526	225,083
RGA Reinsurance Company (Barbados) Ltd. ⁽¹⁾	957,051	835,126	95,859	113,049	66,097
RGA Australia	370,039	335,631	(7,694)	(18,128)	874
RGA Atlantic Reinsurance Company Ltd.	596,016	554,417	110,172	132,192	113,055
RGA Americas Reinsurance Company, Ltd. ⁽¹⁾	3,416,512	3,135,177	267,876	260,599	258,588
Other reinsurance subsidiaries	2,224,833	2,136,480	130,289	300,847	(647,259)

(1) In 2016, the Company contributed to RGA Reinsurance Company (Barbados) Ltd. all of the outstanding shares of its wholly-owned subsidiaries, RGA Global Reinsurance Company, Ltd., and Manor Reinsurance, Ltd. In 2016, the Company also contributed to RGA Americas Reinsurance Company, Ltd. all of the outstanding shares of its wholly-owned subsidiaries, RGA International Reinsurance Company dac and Leidsche Leven Holding B.V. Periods prior to 2016 have been adjusted to reflect the contributions.

Each U.S. domestic insurance subsidiary’s state of domicile imposes minimum risk-based capital (“RBC”) requirements that were developed by the NAIC. The formulas for determining the amount of RBC specify various weighting factors that are applied to financial balances or various levels of activity based on the perceived degree of risk. Regulatory compliance is determined by a ratio of total adjusted capital, as defined by the NAIC, to authorized control level RBC, as defined by the NAIC. Companies below specific trigger points or ratios are classified within certain levels, each of which requires specified corrective action. Each of RGA’s U.S. domestic insurance subsidiaries exceeded the minimum RBC requirements for all periods presented herein. These requirements do not represent a significant constraint for the payment of dividends by RGA’s U.S. domestic insurance companies.

The licensing orders of the Company’s special purpose companies stipulate a minimum amount of capital required based on the purpose of the entity and the underlying business. These companies are subject to enhanced oversight by the regulator which includes filing detailed plans of operations before commencing operations or making material changes to existing agreements or entering into new agreements. Each of the Company’s Special Purpose Life Reinsurance Captives (“SPLRC”) exceeded the minimum capital requirements for all periods presented herein.

The Company's foreign insurance subsidiaries prepare financial statements in accordance with local regulatory requirements. The regulatory authorities in these foreign jurisdictions establish some form of minimum regulatory capital and surplus requirements. All of the Company's foreign insurance subsidiaries have regulatory capital and surplus that exceed the local minimum requirements. These requirements do not represent a significant constraint for the payment of dividends by the Company's foreign insurance companies.

The state of domicile of certain of the Company's SPLRCs follow prescribed accounting practices differing from NAIC statutory accounting practices ("NAIC SAP") applicable to their statutory financial statements. Specifically, these prescribed practices require that surplus note interest accrued but not approved for payment be reported as a direct reduction of surplus and an addition to the surplus note balance. Under NAIC SAP, surplus note interest is not to be reported until approved for payment and is reported as a reduction of net investment income in the Summary of Operations. In addition, these prescribed practices allow the SPLRC to reflect letters of credit issued for its benefit as an admitted asset and a direct credit to unassigned surplus. Under NAIC SAP, letters of credit issued on behalf of the reporting company are not reported on the balance sheet.

A reconciliation of the Company's surplus between NAIC SAP and practices prescribed by the state of domicile is shown below (dollars in thousands):

	December 31,	
	2016	2015
Prescribed practice – surplus note	\$ 574,574	\$ 639,515
Prescribed practice – letters of credit	(615,100)	(570,100)
Surplus (deficit) – NAIC SAP	\$ (40,526)	\$ 69,415

Reinsurance Company of Missouri ("RCM"), RGA Reinsurance and Chesterfield Reinsurance Company ("Chesterfield Re") are subject to Missouri statutory provisions that restrict the payment of dividends. They may not pay dividends in any 12-month period in excess of the greater of the prior year's statutory net gain from operations or 10% of statutory capital and surplus at the preceding year-end, without regulatory approval. The applicable statutory provisions only permit an insurer to pay a shareholder dividend from unassigned surplus. As of January 1, 2017, RGA Reinsurance could pay maximum dividends, without prior approval, of approximately \$152.2 million. Any dividends paid by RGA Reinsurance would be paid to RCM, its parent company, which in turn has restrictions related to its ability to pay dividends to RGA. Chesterfield Re would pay dividends to its immediate parent Chesterfield Financial Holdings LLC, ("Chesterfield Financial"), which would in turn pay dividends to RCM, subject to the terms of the indenture for the embedded value securitization transaction, in which Chesterfield Financial cannot declare or pay any dividends so long as any private placement notes are outstanding. The Missouri Department of Insurance, Financial Institution and Professional Registration, allows RCM to pay a dividend to RGA to the extent RCM received the dividend from RGA Reinsurance, without limitation related to the level of unassigned surplus. Dividend payments from other subsidiaries are subject to regulations in the jurisdiction of domicile, which are generally based on their earnings and/or capital level. In addition, the earnings of substantially all of the Company's foreign subsidiaries have been indefinitely reinvested in foreign operations.

There are no regulatory restrictions that limit the payment of dividends by RGA, except those generally applicable to Missouri corporations. Dividends are payable by Missouri corporations only under the circumstances specified in The General and Business Corporation Law of Missouri. RGA would not be permitted to pay common stock dividends if there is any accrued and unpaid interest on its subordinated debentures and its junior subordinated debentures. Furthermore, the ability of RGA to pay dividends is dependent on business conditions, income, cash requirements of the Company, receipt of dividends from its subsidiaries, financial covenant provisions and other relevant factors.

Note 12 COMMITMENTS, CONTINGENCIES AND GUARANTEES

Commitments

Funding of Investments

The Company's commitments to fund investments as of December 31, 2016 and 2015 are presented in the following table (dollars in thousands):

	2016	2015
Limited partnerships and real estate joint ventures	\$ 332,169	\$ 263,163
Commercial mortgage loans	126,248	86,325
Bank loans	58,318	48,686
Equity release mortgages	130,324	8,504

The Company anticipates that the majority of its current commitments will be invested over the next five years; however, these commitments could become due any time at the request of the counterparties. Investments in limited partnerships and real estate joint ventures are carried at cost or reported using the equity method and included in other invested assets in the consolidated balance sheets. Bank loans are carried at fair value and included in fixed maturity securities available-for-sale. Equity release mortgages are carried at unpaid principal balances, net of any amortized premium or discount and valuation allowance and included in other invested assets.

Leases

The Company leases office space and furniture and equipment under non-cancelable operating lease agreements, which expire at various dates. Future minimum office space annual rentals under non-cancelable operating leases along with associated sublease income at December 31, 2016 are as follows (dollars in thousands):

	Operating Leases	Sublease Income
2017	\$ 11,297	\$ 119
2018	10,250	—
2019	6,389	—
2020	4,317	—
2021	2,473	—
Thereafter	11,008	—

Rent expenses amounted to approximately \$13.7 million, \$12.1 million and \$19.3 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Off-Balance Sheet Arrangements

In 2013, the Company executed a series of incentive agreements with the County of St. Louis, Missouri (the “County”). Under these agreements, the Company transferred its newly constructed world headquarters to the County in exchange for taxable industrial revenue bonds (the “bonds”), in a series of bond issuances during 2013 and 2014, with a maximum amount of \$150.0 million. As a result, the Company was able to reduce the cost of constructing and operating its world headquarters by reducing certain state and local tax expenditures. The Company simultaneously leased the world headquarters from the County and has an option to purchase the world headquarters for a nominal fee upon tendering the bonds back to the County. The payments due to the Company under the terms of the bonds and the amounts owed by the Company under the terms of the lease agreement qualify for the right of offset under GAAP. As such, neither the bonds nor the lease obligation is recorded on the consolidated balance sheets as an asset or liability, respectively. The world headquarters is recorded as an asset of the Company in “Other assets” on the consolidated balance sheets.

Contingencies

Litigation

The Company is subject to litigation in the normal course of its business. The Company currently has no material litigation. A legal reserve is established when the Company is notified of an arbitration demand or litigation or is notified that an arbitration demand or litigation is imminent, it is probable that the Company will incur a loss as a result and the amount of the probable loss is reasonably capable of being estimated.

Other Contingencies

The Company indemnifies its directors and officers as provided in its charters and by-laws. Since this indemnity generally is not subject to limitation with respect to duration or amount, the Company does not believe that it is possible to determine the maximum potential amount due under this indemnity in the future.

Guarantees

Statutory Reserve Support

RGA, through wholly-owned subsidiaries, has committed to provide statutory reserve support to third-parties, in exchange for a fee, by funding loans if certain defined events occur. Such statutory reserves are required under the U.S. Valuation of Life Policies Model Regulation (commonly referred to as Regulation XXX for term life insurance policies and Regulation A-XXX for universal life secondary guarantees). The third-parties have recourse to RGA should the subsidiary fail to provide the required funding, however, as of December 31, 2016, the Company does not believe that it will be required to provide any funding under these commitments as the occurrence of the defined events is considered remote. The following table presents the maximum potential obligation for these commitments as of December 31, 2016 (dollars in millions):

Commitment Period	Maximum Potential Obligation
2023	\$ 500.0
2033	950.0
2034	3,000.0
2035	1,314.2
2036	1,432.0

Other Guarantees

RGA has issued guarantees to third parties on behalf of its subsidiaries for the payment of amounts due under certain reinsurance treaties, securities borrowing arrangements, financing arrangements and office lease obligations, whereby if a subsidiary fails to meet an obligation, RGA or one of its other subsidiaries will make a payment to fulfill the obligation. In limited circumstances, treaty guarantees are granted to ceding companies in order to provide them additional security, particularly in cases where RGA's subsidiary is relatively new, unrated, or not of a significant size, relative to the ceding company. Liabilities supported by the treaty guarantees, before consideration for any legally offsetting amounts due from the guaranteed party are reflected on the Company's consolidated balance sheets in a policy related liability. Potential guaranteed amounts of future payments will vary depending on production levels and underwriting results. Guarantees related to borrowed securities provide additional security to third parties should a subsidiary fail to return the borrowed securities when due. RGA's guarantees issued as of December 31, 2016 and 2015 are reflected in the following table (dollars in thousands):

	2016	2015
Treaty guarantees	\$ 902,216	\$ 765,505
Treaty guarantees, net of assets in trust	780,786	634,909
Borrowed securities	263,820	259,540
Financing arrangements	119,073	100,000
Lease obligations	2,428	5,217

Note 13 DEBT

Long-Term Debt

The Company's long-term debt consists of the following as of December 31, 2016 and 2015 (dollars in thousands):

	2016	2015
\$300 million 5.625% Senior Notes due 2017	\$ 299,945	\$ 299,671
\$400 million 6.45% Senior Notes due 2019	399,805	399,737
\$400 million 5.00% Senior Notes due 2021	399,025	398,803
\$400 million 4.70% Senior Notes due 2023	398,986	398,835
\$400 million 3.95% Senior Notes due 2026	399,985	—
\$100 million 4.09% Promissory Note due 2039	94,370	96,849
\$400 million 6.20% Subordinated Debentures due 2042	400,000	400,000
\$400 million 5.75% Subordinated Debentures due 2056	400,000	—
\$400 million Variable Rate Junior Subordinated Debentures due 2065	318,737	318,734
Sub-total	3,110,853	2,312,629
Unamortized issuance costs	(22,218)	(15,081)
Long-term Debt	\$ 3,088,635	\$ 2,297,548

In June 2016, RGA issued 3.95% Senior Notes due September 15, 2026 with a face amount of \$400.0 million and 5.75% Fixed-To-Floating Rate Subordinated Debentures due June 15, 2056 with a face amount of \$400.0 million. These securities have been registered with the Securities and Exchange Commission. The net proceeds from these offerings were approximately \$791.2 million and will be used in part to repay upon maturity the Company's \$300.0 million 5.625% Senior Notes that mature in March 2017. The remainder will be used for general corporate purposes. Capitalized issue costs were approximately \$8.8 million.

On December 15, 2015, the interest rate on RGA's Junior Subordinated Debentures with a face amount of \$400.0 million converted from a fixed rate of 6.75% to a floating rate equal to the three-month LIBOR plus 266.5 basis points.

Certain of the Company's debt agreements contain financial covenant restrictions related to, among others, liens, the issuance and disposition of stock of restricted subsidiaries, minimum requirements of consolidated net worth, maximum ratios of debt to capitalization and change of control provisions. A material ongoing covenant default could require immediate payment of the amount due, including principal, under the various agreements. Additionally, the Company's debt agreements contain cross-default covenants, which would make outstanding borrowings immediately payable in the event of a material uncured covenant default under any of the agreements, including, but not limited to, non-payment of indebtedness when due for an amount in excess of

\$100.0 million, bankruptcy proceedings, or any other event which results in the acceleration of the maturity of indebtedness. As of December 31, 2016 and 2015, the Company had \$3,110.9 million and \$2,312.6 million, respectively, in outstanding borrowings under its debt agreements and was in compliance with all covenants under those agreements. As of December 31, 2016 and 2015, the average interest rate on long-term debt outstanding was 5.16% and 5.20%, respectively.

The ability of the Company to make debt principal and interest payments depends on the earnings and surplus of subsidiaries, investment earnings on undeployed capital proceeds, and the Company's ability to raise additional funds. Future principal payments due on long-term debt, excluding discounts, as of December 31, 2016, were as follows (dollars in thousands):

	Calendar Year					
	2017	2018	2019	2020	2021	Thereafter
Long-term debt	\$ 302,582	\$ 2,690	\$ 402,802	\$ 2,919	\$ 403,040	\$ 2,000,140

Credit and Committed Facilities

The Company has obtained bank letters of credit in favor of various affiliated and unaffiliated insurance companies from which the Company assumes business. These letters of credit represent guarantees of performance under the reinsurance agreements and allow ceding companies to take statutory reserve credits. Certain of these letters of credit contain financial covenant restrictions. At December 31, 2016 and 2015, there were approximately \$189.4 million and \$132.2 million, respectively, of undrawn outstanding bank letters of credit in favor of third parties. Additionally, the Company utilizes letters of credit primarily to secure reserve credits when it retrocedes business to its affiliated subsidiaries. The Company cedes business to its affiliates to help reduce the amount of regulatory capital required in certain jurisdictions such as the U.S. and the United Kingdom. As of December 31, 2016 and 2015, \$1,010.8 million and \$1,127.4 million, respectively, in undrawn letters of credit from various banks were outstanding, primarily backing reinsurance between the various subsidiaries of the Company. The banks providing letters of credit to the Company are included on the NAIC list of approved banks.

The Company maintains seven committed credit facilities, a syndicated revolving credit facility with a capacity of \$850.0 million and six letter of credit facilities with a combined capacity of \$741.6 million. The Company may borrow cash and obtain letters of credit in multiple currencies under its syndicated revolving credit facility. The following table provides additional information on the Company's existing committed credit facilities as of December 31, 2016 and 2015 (dollars in thousands):

Facility Capacity	Maturity Date	Amount Utilized ⁽¹⁾ December 31,		Basis of Fees
		2016	2015	
270,000	November 2017	270,000	270,000	Fixed
161,974 ⁽²⁾	November 2017	31,382	66,154	Fixed
72,080 ⁽²⁾	December 2018	72,080	36,430	Fixed
17,513 ⁽²⁾	March 2019	17,513	45,422	Fixed
120,000	June 2019	85,040	85,040	Fixed
850,000	September 2019	96,095	313,659	Senior unsecured long-term debt rating
100,000	June 2020	70,690	68,657	Fixed

(1) Represents issued but undrawn letters of credit. There was no cash borrowed for the periods presented.

(2) Foreign currency denominated facility, amounts presented are in U.S. dollars.

Fees associated with the Company's other letters of credit are not fixed for periods in excess of one year and are based on the Company's ratings and the general availability of these instruments in the marketplace. Total fees expensed associated with the Company's letters of credit were \$7.9 million, \$10.9 million and \$12.6 million for the years ended December 31, 2016, 2015 and 2014, respectively, and are included in policy acquisition costs and other insurance expenses.

Note 14 COLLATERAL FINANCE AND SECURITIZATION NOTES

Collateral Finance Notes

In June 2006, RGA's subsidiary, Timberlake Financial L.L.C. ("Timberlake Financial"), issued \$850.0 million of Series A Floating Rate Insured Notes, due June 2036, in a private placement. The notes were issued to fund the collateral requirements for statutory reserves required by Regulation XXX on specified term life insurance policies reinsured by RGA Reinsurance and retroceded to Timberlake Re. Proceeds from the notes, along with a \$112.8 million direct investment by RGA, were deposited into a series of accounts that collateralize the notes and are not available to satisfy the general obligations of the Company. As of December 31, 2016 and 2015, respectively, the Company held assets in trust and in custody of \$893.8 million and \$932.6 million, of which \$24.1 million and \$37.2 million were held in a Debt Service Coverage account to cover interest payments on the notes. Interest on the notes accrues at an annual rate of 1-month LIBOR plus a base rate margin, payable monthly, and totaled \$4.2 million, \$3.8 million and \$4.0 million in 2016, 2015 and 2014, respectively.

In May 2015, RGA's subsidiary, RGA Reinsurance Company (Barbados) Ltd. ("RGA Barbados") obtained CAD\$200.0 million of collateral financing from a third party through 2020, enabling RGA Barbados to support collateral requirements for Canadian reinsurance transactions. Capitalized issuance costs were approximately \$1.3 million. The obligation is reflected on the consolidated balance sheets in collateral finance and securitization notes. Interest on the collateral financing is payable quarterly and accrues at 3-month Canadian Dealer Offered Rate plus a margin and totaled \$4.0 million and \$2.3 million in 2016 and 2015, respectively.

In October 2015, RGA's subsidiary, RGA Americas Reinsurance Company, Ltd. ("RGA Americas"), entered into a collateral financing transaction pursuant to which it issued a CAD\$150 million note and, in return, obtained a CAD\$150 million demand note issued by a designated series of a Delaware master trusts. The demand note matures in October 2020 and is used to support collateral requirements for Canadian reinsurance transactions.

The demand note is secured by a portfolio of specified assets that have an aggregate market value at least equal to the principal amount of the demand note and a payment obligation pledged by a third party financial institution. The principal amount of the demand note is payable upon demand by the holder, which creates a corresponding payment under the note issued by RGA Americas. The note issued by RGA Americas bears interest at a rate equal to the rate on the corresponding demand note, plus an amount representing fees payable to the applicable third party financial institution. Through December 31, 2016, no principal payments have been received or are currently due on the demand note and, as a result, there was no payment obligation under the note issued by RGA Americas. Accordingly, the notes are not reflected in the Company's consolidated balance sheet or the table below, as of that date. Capitalized issuance costs were approximately \$2.4 million.

Securitization Notes

In December 2014, RGA's subsidiary, Chesterfield Financial Holdings LLC, ("Chesterfield Financial"), issued \$300.0 million of asset-backed notes due December 2024 in a private placement. The notes were issued as part of an embedded value securitization transaction covering a closed block of policies assumed by RGA Reinsurance and retroceded to Chesterfield Re. Proceeds from the notes, along with a direct investment by the Company, were applied by Chesterfield Financial to (i) pay certain transaction-related expenses, (ii) establish a reserve account owned by Chesterfield Financial and pledged to the indenture trustee for the benefit of the holders of the notes (primarily to cover interest payments on the notes), and (iii) to fund an initial stock purchase from and capital contribution to Chesterfield Re to capitalize Chesterfield Re and to finance the payment of a ceding commission by Chesterfield Re to RGA Reinsurance under the retrocession agreement. Capitalized issuance costs were approximately \$5.4 million. As of December 31, 2016 and 2015, the Company held deposits in trust of \$22.1 million and \$22.4 million, respectively, to cover interest payments on the notes, which are not available to satisfy the general obligations of the Company. Interest on the notes accrues at an annual rate of 4.50%, payable quarterly, and totaled \$13.1 million, \$14.0 million and \$0.6 million in 2016, 2015 and 2014, respectively. The notes represent senior, secured indebtedness of Chesterfield Financial. Limited support is provided by RGA for temporary potential liquidity events at Chesterfield Financial and for temporary potential statutory capital and surplus events at Chesterfield Re. Otherwise, there is no legal recourse to RGA or its other subsidiaries. The notes are not insured or guaranteed by any other person or entity.

The Company's collateral finance and securitization notes consist of the following as of December 31, 2016 and 2015 (dollars in thousands):

	2016	2015
Timberlake Financial	\$ 451,880	\$ 480,451
RGA Barbados	148,820	144,540
Chesterfield Financial	246,300	282,300
Unamortized issuance costs	(6,300)	(8,130)
Total	\$ 840,700	\$ 899,161

Note 15 SEGMENT INFORMATION

The Company has geographic-based and business-based operational segments. Geographic-based operations are further segmented into traditional and financial solutions businesses. In the fourth quarter of 2016, the Company changed the name of its Non-Traditional segments to Financial Solutions. The name change better aligns external reports to internally used terminology. This name change does not affect any previously reported results for the Financial Solutions segments. The Company's reporting segments are as follows:

The U.S. and Latin America Traditional segment provides individual and group life and health reinsurance to domestic clients for a variety of products through yearly renewable term agreements, coinsurance, and modified coinsurance. The U.S. and Latin America Financial Solutions segment includes asset-intensive products that concentrate on the investment risk within underlying annuities and corporate-owned life insurance policies, and financial reinsurance that assists ceding companies in meeting applicable regulatory requirements while enhancing their financial strength and regulatory surplus position.

The Canada Traditional segment is primarily engaged in individual life reinsurance, as well as creditor, group life and health, critical illness and disability reinsurance, through yearly renewable term and coinsurance agreements. The Canada Financial Solutions segment concentrates on assisting clients with longevity risk transfer structures within underlying annuities and pension benefit obligations, and on assisting clients in meeting applicable regulatory requirements while enhancing their financial strength and regulatory surplus position through financial reinsurance structures.

The Europe, Middle East and Africa Traditional segment provides individual and group life and health products through yearly renewable term and coinsurance agreements, reinsurance of critical illness coverage that provides a benefit in the event of the diagnosis of a pre-defined critical illness and underwritten annuities. The Europe, Middle East and Africa Financial Solutions segment provides longevity, asset-intensive and financial reinsurance. Longevity reinsurance takes the form of closed block annuity reinsurance and longevity swap structures.

The Asia Pacific Traditional segment provides individual and group life and health reinsurance, critical illness coverage, disability and superannuation through yearly renewable term and coinsurance agreements. The Asia Pacific Financial Solutions segment provides financial reinsurance, asset-intensive and certain disability and life blocks.

Corporate and Other operations include investment income from invested assets not allocated to support segment operations and proceeds from the Company's capital-raising efforts that have not been deployed yet, in addition to investment related gains or losses. Additionally, Corporate and Other includes results associated with the Company's collateral finance and securitization notes and results from certain wholly-owned subsidiaries and joint ventures that, among other activities, develop and market technology solutions for the insurance industry.

The accounting policies of the segments are the same as those described in Note 2 – "Summary of Significant Accounting Policies." The Company measures segment performance primarily based on profit or loss from operations before income taxes. There are no intersegment reinsurance transactions and the Company does not have any material long-lived assets.

The Company allocates capital to its segments based on an internally developed economic capital model, the purpose of which is to measure the risk in the business and to provide a basis upon which capital is deployed. The economic capital model considers the unique and specific nature of the risks inherent in the Company's businesses. As a result of the economic capital allocation process, a portion of investment income is attributed to the segments based on the level of allocated capital. In addition, the segments are charged for excess capital utilized above the allocated economic capital basis. This charge is included in policy acquisition costs and other insurance expenses.

Information related to revenues, income (loss) before income taxes, interest expense, depreciation and amortization, and assets of the Company's operations are summarized below (dollars in thousands).

For the years ended December 31,	2016	2015	2014
Revenues:			
U.S. and Latin America:			
Traditional	\$ 5,964,968	\$ 5,465,026	\$ 5,283,268
Financial Solutions	840,446	643,865	1,014,143
Total	6,805,414	6,108,891	6,297,411
Canada:			
Traditional	1,118,004	1,023,012	1,153,515
Financial Solutions	46,938	45,034	28,350
Total	1,164,942	1,068,046	1,181,865
Europe, Middle East and Africa:			
Traditional	1,195,149	1,190,742	1,235,049
Financial Solutions	340,518	286,666	322,798
Total	1,535,667	1,477,408	1,557,847
Asia Pacific:			
Traditional	1,771,150	1,638,357	1,686,436
Financial Solutions	63,382	56,581	70,282
Total	1,834,532	1,694,938	1,756,718
Corporate and Other	180,956	68,895	110,353
Total	\$ 11,521,511	\$ 10,418,178	\$ 10,904,194

For the years ended December 31,	2016	2015	2014
Income (loss) before income taxes:			
U.S. and Latin America:			
Traditional	\$ 371,101	\$ 235,771	\$ 351,645
Financial Solutions	283,380	207,963	302,944
Total	654,481	443,734	654,589
Canada:			
Traditional	134,705	124,175	95,435
Financial Solutions	7,945	13,902	6,265
Total	142,650	138,077	101,700
Europe, Middle East and Africa:			
Traditional	30,059	48,410	60,305
Financial Solutions	138,007	108,445	101,337
Total	168,066	156,855	161,642
Asia Pacific:			
Traditional	113,928	105,654	90,602
Financial Solutions	4,063	19,619	11,693
Total	117,991	125,273	102,295
Corporate and Other	(39,242)	(119,144)	(11,693)
Total	\$ 1,043,946	\$ 744,795	\$ 1,008,533
For the years ended December 31,	2016	2015	2014
Interest expense:			
Corporate and Other	\$ 137,623	\$ 142,863	\$ 96,700
Total	\$ 137,623	\$ 142,863	\$ 96,700
For the years ended December 31,	2016	2015	2014
Depreciation and amortization:			
U.S. and Latin America:			
Traditional	\$ 271,732	\$ 218,974	\$ 558,404
Financial Solutions	155,560	44,275	232,348
Total	427,292	263,249	790,752
Canada:			
Traditional	22,170	23,887	204,229
Financial Solutions	11	—	—
Total	22,181	23,887	204,229
Europe, Middle East and Africa:			
Traditional	46,562	60,193	57,291
Financial Solutions	72	—	—
Total	46,634	60,193	57,291
Asia Pacific:			
Traditional	45,562	31,955	94,763
Financial Solutions	1,492	217	409
Total	47,054	32,172	95,172
Corporate and Other	13,894	16,495	3,644
Total	\$ 557,055	\$ 395,996	\$ 1,151,088

The table above includes amortization of DAC, including the effect from investment related gains and losses. During 2015, the Company enhanced its process to track certain DAC components. See Note 8 - "Deferred Policy Acquisition Costs" for additional information.

For the years ended December 31,	2016	2015
Assets:		
U.S. and Latin America:		
Traditional	\$ 18,140,825	\$ 16,554,509
Financial Solutions	13,712,106	13,405,878
Total	31,852,931	29,960,387
Canada:		
Traditional	3,846,682	3,604,344
Financial Solutions	85,405	27,543
Total	3,932,087	3,631,887
Europe, Middle East and Africa:		
Traditional	2,559,124	2,757,593
Financial Solutions	3,876,131	4,162,703
Total	6,435,255	6,920,296
Asia Pacific:		
Traditional	3,968,081	3,227,530
Financial Solutions	676,281	742,528
Total	4,644,362	3,970,058
Corporate and Other	6,233,244	5,900,524
Total	\$ 53,097,879	\$ 50,383,152

Companies in which RGA has significant influence over the operating and financing decisions but are not required to be consolidated, are reported on the equity basis of accounting. The equity in the net income of such investments is not material to the results of operations or financial position of individual segments or the Company taken as a whole. Capital expenditures of each reporting segment were immaterial in the periods noted.

No individual client generated 10% or more of the Company's total gross premiums on a consolidated basis in 2016, 2015 and 2014. For the purpose of this disclosure, companies that are within the same insurance holding company structure are combined.

Note 16 SHORT-DURATION CONTRACTS

The Company uses several actuarial methods to compute incurred-but-not reported liabilities. These methods use historical claim reporting patterns to develop a triangle of reported claim amounts. The claim triangle is then used to develop the ultimate claims amount and the incurred-but-not reported liabilities. Expected claim methods use exposure data such as premiums to develop the ultimate claim amount. The final method blends the estimates from the development and the expected claim methods. The Company did not make significant changes to the methods used to compute the incurred-but-not reported liabilities in 2016.

The following tables provide information on incurred and paid claims development, net of retrocession, for short-duration reinsurance contracts for the Company's U.S. and Latin America and Asia Pacific Traditional segments, which primarily relate to group life and health (including disability) business. The short-duration business for the Company's other segments is immaterial. Liabilities for claims and claims adjustment expenses, net of reinsurance equals total incurred claims less cumulative paid claims plus outstanding liabilities prior to 2012.

The Company provides reinsurance on large quota share transactions. It is common industry practice for cedants to provide loss information on a bulk basis without comprehensive claim details. Additionally, a claim under aggregate stop loss coverage may be the result of thousands of claims, but the Company only pays the excess amount. Therefore, it is impractical to provide meaningful claim count detail by accident year in the tables shown below.

U.S. and Latin America

(in thousands)

As of

December 31, 2016

Incurred Claims and Allocated Claim Adjustments, Net of Reinsurance ⁽¹⁾							Total of Incurred-but-Not-Reported Liabilities Plus Expected Development on Reported Claims
Accident Year	For the Years Ended December 31,						
	2012	2013	2014	2015	2016		
2012	\$ 322,579	\$ 309,119	\$ 297,037	\$ 298,262	\$ 299,098	\$ 98	
2013		349,262	332,907	338,977	336,552	1,263	
2014			407,953	411,373	396,383	4,284	
2015				459,524	460,917	26,531	
2016					500,843	220,381	
				Total	\$ 1,993,793		
Cumulative Paid Claims and Allocated Claim Adjustment Expense, Net of Reinsurance ⁽¹⁾							
Accident Year	For the Years Ended December 31,						
	2012	2013	2014	2015	2016		
2012	\$ 109,323	\$ 222,139	\$ 243,890	\$ 252,018	\$ 258,297		
2013		114,457	248,828	277,130	285,817		
2014			128,813	304,578	337,081		
2015				146,196	360,658		
2016					184,940		
				Total	\$ 1,426,793		
				All outstanding claims prior to 2012, net of reinsurance		239,700	
				Liabilities for claims and claim adjustment expense, net of reinsurance	\$ 806,700		

(1) 2012-2015 Unaudited.

Asia Pacific

(in thousands)

As of

December 31, 2016

Incurred Claims and Allocated Claim Adjustments, Net of Reinsurance ⁽¹⁾							Total of Incurred-but-Not-Reported Liabilities Plus Expected Development on Reported Claims
Accident Year	For the Years Ended December 31,						
	2012	2013	2014	2015	2016		
2012	\$ 212,571	\$ 285,302	\$ 289,707	\$ 293,097	\$ 300,903	\$ 15,050	
2013		299,373	320,189	310,631	307,961	27,764	
2014			283,298	307,111	271,418	43,893	
2015				284,773	262,946	82,199	
2016					232,788	139,345	
				Total	\$ 1,376,016		
Cumulative Paid Claims and Allocated Claim Adjustment Expense, Net of Reinsurance ⁽¹⁾							
Accident Year	For the Years Ended December 31,						
	2012	2013	2014	2015	2016		
2012	\$ 50,433	\$ 138,375	\$ 189,503	\$ 228,016	\$ 249,043		
2013		50,928	147,500	214,070	241,245		
2014			35,298	138,728	181,441		
2015				50,066	121,254		
2016					39,173		
				Total	\$ 832,156		
				All outstanding claims prior to 2012, net of reinsurance		171,608	
				Liabilities for claims and claim adjustment expense, net of reinsurance	\$ 715,468		

(1) 2012-2015 Unaudited.

The reconciliation of the net incurred and paid claims development tables to the liability for claims and claim adjustment expense in the consolidated balance sheets are as follows:

	December 31, 2016
Liabilities for claims and claim adjustment expense, net of reinsurance:	
U.S. and Latin America	\$ 806,700
Asia Pacific	715,468
Liabilities for claims and claim adjustment expense, net of reinsurance	1,522,168
Adjustments to reconcile to total policy claims and future policy benefits:	
Reinsurance recoverable	20,009
Effect of discounting and unallocated claims adjustment expense	(141,433)
Total adjustments	(121,424)
Other short-duration contracts:	
Canada	155,520
Europe, Middle East and Africa	312,947
Other	117,977
Total short-duration contracts	1,987,188
Other than short-duration contracts	21,857,411
Total future policy benefits and other policy claims and benefits	\$ 23,844,599

The following is unaudited supplementary information about average historical claims duration as of December 31, 2016:

Average Annual Payout of Incurred Claims by Age, Net of Reinsurance						
Years	1	2	3	4	5	
U.S. and Latin America	34.3%	42.1%	8.0%	2.6%	2.1%	
Asia Pacific	16.4%	31.4%	18.1%	10.8%	7.0%	

Note 17 EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted earnings per share on net income (in thousands, except per share information):

	2016	2015	2014
Earnings:			
Net income (numerator for basic and diluted calculations)	\$ 701,443	\$ 502,166	\$ 684,047
Shares:			
Weighted average outstanding shares (denominator for basic calculations)	64,274	66,553	69,248
Equivalent shares from outstanding stock options	715	739	714
Diluted shares (denominator for diluted calculations)	64,989	67,292	69,962
Earnings per share:			
Basic	\$ 10.91	\$ 7.55	\$ 9.88
Diluted	10.79	7.46	9.78

The calculation of common equivalent shares does not include the impact of options having a strike or conversion price that exceeds the average stock price for the earnings period, as the result would be antidilutive. The calculation of common equivalent shares also excludes the impact of outstanding performance contingent shares, as the conditions necessary for their issuance have not been satisfied as of the end of the reporting period. Approximately 0.3 million outstanding stock options were not included in the calculation of common equivalent shares during 2015. During 2016 and 2014, all outstanding options were included in the calculation of common equivalent shares. Approximately 0.4 million, 0.4 million and 0.5 million performance contingent shares were excluded from the calculation of common equivalent shares during 2016, 2015 and 2014, respectively.

Note 18 EQUITY

Common stock

The changes in number of common stock shares, issued, held in treasury and outstanding are as follows for the periods indicated:

	Issued	Held In Treasury	Outstanding
Balance, December 31, 2013	79,137,758	8,369,540	70,768,218
Common Stock acquired	—	2,530,608	(2,530,608)
Stock-based compensation ⁽¹⁾	—	(535,351)	535,351
Balance, December 31, 2014	79,137,758	10,364,797	68,772,961
Common Stock acquired	—	4,145,440	(4,145,440)
Stock-based compensation ⁽¹⁾	—	(577,005)	577,005
Balance, December 31, 2015	79,137,758	13,933,232	65,204,526
Common Stock acquired	—	1,356,892	(1,356,892)
Stock-based compensation ⁽¹⁾	—	(454,868)	454,868
Balance, December 31, 2016	79,137,758	14,835,256	64,302,502

(1) Represents net shares issued from treasury pursuant to the Company's stock-based compensation programs.

Common stock held in treasury

Common stock held in treasury is accounted for at average cost. Gains resulting from the reissuance of "Common stock held in treasury" are credited to "Additional paid-in capital." Losses resulting from the reissuance of "Common stock held in treasury" are charged first to "Additional paid-in capital" to the extent the Company has previously recorded gains on treasury share transactions, then to "Retained earnings."

During 2014, RGA's board of directors authorized a share repurchase program, with no expiration date, to repurchase up to \$300.0 million of RGA's outstanding common stock. In connection with this authorization, the board of directors terminated the stock repurchase authority granted in 2013. During 2014, RGA repurchased 2,530,608 shares of common stock under this program for \$197.7 million. The common shares repurchased have been placed into treasury to be used for general corporate purposes.

During 2015, RGA's board of directors authorized and amended a share repurchase program, with no expiration date, to repurchase up to \$450.0 million of RGA's outstanding common stock. In connection with this authorization, the board of directors terminated the stock repurchase authority granted in 2014. During 2015, RGA repurchased 4,145,440 shares of common stock under this program for \$375.3 million.

During 2016, RGA's board of directors authorized and amended a share repurchase program, with no expiration date, to repurchase up to \$400.0 million of RGA's outstanding common stock. In connection with this authorization, the board of directors terminated the stock repurchase authority granted in 2015. During 2016, RGA repurchased 1,356,892 shares of common stock under this program for \$116.5 million.

On January 26, 2017, RGA's board of directors authorized a share repurchase program for up to \$400.0 million of RGA's outstanding common stock. The authorization was effective immediately and does not have an expiration date. In connection with this new authorization, the board of directors terminated the stock repurchase authority granted in 2016.

Accumulated other comprehensive income (loss)

The following table presents the components of the Company's other comprehensive income (loss) for the years ended December 31, 2016, 2015 and 2014 (dollars in thousands):

For the year ended December 31, 2016:

	Before-Tax Amount	Tax (Expense) Benefit	After-Tax Amount
Foreign currency translation adjustments:			
Change arising during year	\$ 39,925	\$ (24,663)	\$ 15,262
Foreign currency swap	(10,234)	3,582	(6,652)
Net foreign currency translation adjustments	29,691	(21,081)	8,610
Unrealized gains on investments: ⁽¹⁾			
Unrealized net holding gains arising during the year	641,606	(180,448)	461,158
Less: Reclassification adjustment for net gains realized in net income	65,798	(23,029)	42,769
Net unrealized gains	575,808	(157,419)	418,389
Change in unrealized OTTI on fixed maturity securities	1,457	(510)	947
Unrealized pension and postretirement benefits:			
Net prior service cost arising during the year	444	(149)	295
Net gain arising during the period	4,427	(1,623)	2,804
Unrealized pension and postretirement benefits, net	4,871	(1,772)	3,099
Other comprehensive income (loss)	\$ 611,827	\$ (180,782)	\$ 431,045

For the year ended December 31, 2015:

	Before-Tax Amount	Tax (Expense) Benefit	After-Tax Amount
Foreign currency translation adjustments:			
Change arising during year	\$ (342,539)	\$ 17,129	\$ (325,410)
Foreign currency swap	96,019	(33,607)	62,412
Net foreign currency translation adjustments	(246,520)	(16,478)	(262,998)
Unrealized losses on investments: ⁽¹⁾			
Unrealized net holding losses arising during the year	(1,084,732)	359,407	(725,325)
Less: Reclassification adjustment for net losses realized in net income	(55,767)	19,518	(36,249)
Net unrealized losses	(1,028,965)	339,889	(689,076)
Unrealized pension and postretirement benefits:			
Net prior service cost arising during the year	337	(107)	230
Net gain arising during the period	4,618	(1,619)	2,999
Unrealized pension and postretirement benefits, net	4,955	(1,726)	3,229
Other comprehensive income	\$ (1,270,530)	\$ 321,685	\$ (948,845)

For the year ended December 31, 2014:

	Before-Tax Amount	Tax (Expense) Benefit	After-Tax Amount
Foreign currency translation adjustments:			
Change arising during year	\$ (154,132)	\$ (4,835)	\$ (158,967)
Foreign currency swap	51,894	(18,163)	33,731
Net foreign currency translation adjustments	(102,238)	(22,998)	(125,236)
Unrealized gains on investments: ⁽¹⁾			
Unrealized net holding gains arising during the year	1,177,017	(357,024)	819,993
Less: Reclassification adjustment for net gains realized in net income	26,405	(9,242)	17,163
Net unrealized gains	1,150,612	(347,782)	802,830
Change in unrealized OTTI on fixed maturity securities	2,612	(914)	1,698
Unrealized pension and postretirement benefits:			
Net prior service cost arising during the year	485	(159)	326
Net loss arising during the period	(43,025)	14,929	(28,096)
Unrealized pension and postretirement benefits, net	(42,540)	14,770	(27,770)
Other comprehensive income (loss)	\$ 1,008,446	\$ (356,924)	\$ 651,522

(1) Includes cash flow hedges. See Note 5 for additional information on cash flow hedges.

A summary of the components of net unrealized appreciation (depreciation) of balances carried at fair value is as follows (dollars in thousands):

For the years ended December 31,	2016	2015	2014
Change in net unrealized appreciation (depreciation) on:			
Fixed maturity securities available-for-sale	\$ 561,906	\$ (1,055,458)	\$ 1,171,996
Other investments ⁽¹⁾	18,900	8,983	(14,292)
Effect on unrealized appreciation on:			
Deferred policy acquisition costs	(3,541)	17,510	(4,480)
Net unrealized appreciation (depreciation)	\$ 577,265	\$ (1,028,965)	\$ 1,153,224

(1) Includes cash flow hedges. See Note 5 for additional information on cash flow hedges.

The balance of and changes in each component of AOCI were as follows (dollars in thousands):

	Accumulated Currency Translation Adjustments	Unrealized Appreciation (Depreciation) of Investments ⁽¹⁾	Pension and Postretirement Benefits	Accumulated Other Comprehensive Income (Loss)
Balance, December 31, 2013	\$ 207,083	\$ 820,245	\$ (21,721)	\$ 1,005,607
OCI before reclassifications	(102,238)	1,185,321	(45,688)	1,037,395
Amounts reclassified from AOCI	—	(32,097)	3,148	(28,949)
Deferred income tax benefit (expense)	(22,998)	(348,696)	14,770	(356,924)
Balance, December 31, 2014	81,847	1,624,773	(49,491)	1,657,129
OCI before reclassifications	(246,520)	(1,101,760)	(1,248)	(1,349,528)
Amounts reclassified from AOCI	—	72,795	6,203	78,998
Deferred income tax benefit (expense)	(16,478)	339,889	(1,726)	321,685
Balance, December 31, 2015	(181,151)	935,697	(46,262)	708,284
OCI before reclassifications	29,691	646,887	(951)	675,627
Amounts reclassified from AOCI	—	(69,622)	5,822	(63,800)
Deferred income tax benefit (expense)	(21,081)	(157,929)	(1,772)	(180,782)
Balance, December 31, 2016	\$ (172,541)	\$ 1,355,033	\$ (43,163)	\$ 1,139,329

(1) Includes cash flow hedges of \$(2,496), \$(29,397) and \$(31,591) as of December 31, 2016, 2015 and 2014, respectively. See Note 5 for additional information on cash flow hedges.

The following table presents the amounts of AOCI reclassifications for the years ended December 31, 2016 and 2015 (dollars in thousands):

Details about AOCI Components	Amount Reclassified from AOCI		Affected Line Item in Statement of Income
	2016	2015	
Net unrealized investment gains (losses):			
Net unrealized gains and losses on available-for-sale securities	\$ 65,798	\$ (55,767)	Investment related gains (losses), net
OTTI on fixed maturity securities	74	—	Investment related gains (losses), net
Cash flow hedges - Currency/Interest rate	510	569	(1)
Cash flow hedges - Forward bond purchase commitments	(301)	(87)	(1)
Deferred policy acquisition costs attributed to unrealized gains and losses	3,541	(17,510)	(2)
Total	69,622	(72,795)	
Provision for income taxes	(17,672)	28,109	
Net unrealized gains (losses), net of tax	\$ 51,950	\$ (44,686)	
Amortization of defined benefit plan items:			
Prior service cost (credit)	\$ 328	\$ (309)	(3)
Actuarial gains/(losses)	(6,150)	(5,894)	(3)
Total	(5,822)	(6,203)	
Provision for income taxes	2,038	2,171	
Amortization of defined benefit plans, net of tax	\$ (3,784)	\$ (4,032)	
Total reclassifications for the period	\$ 48,166	\$ (48,718)	

(1) See Note 5 for information on cash flow hedges.

(2) See Note 8 for information on deferred policy acquisition costs.

(3) See Note 10 for information on employee benefit plans.

Equity Based Compensation

The Company adopted the RGA Flexible Stock Plan (the “Plan”) in February 1993, as amended, and the Flexible Stock Plan for Directors (the “Directors Plan”) in January 1997, as amended, (collectively, the “Stock Plans”). The Stock Plans provide for the award of benefits (collectively “Benefits”) of various types, including stock options, stock appreciation rights (“SARs”), restricted stock, performance shares, cash awards, and other stock-based awards, to key employees, officers, directors and others performing significant services for the benefit of the Company or its subsidiaries. As of December 31, 2016, shares authorized for the granting of Benefits under the Plan and the Directors Plan totaled 13,360,077 and 212,500 respectively. The Company uses treasury shares or shares made available from authorized but unissued shares to support the future exercise of options or settlement of awards granted under its stock plans.

Equity-based compensation expense of \$33.1 million, \$16.0 million, and \$24.4 million related to grants or awards under the Stock Plans was recognized in 2016, 2015 and 2014, respectively. Equity-based compensation expense is principally related to the issuance of stock options, performance contingent restricted units, stock appreciation rights and restricted stock.

In general, options granted under the Plan become exercisable over vesting periods ranging from one to five years. Options are generally granted with an exercise price equal to the stock’s fair value at the date of grant and expire 10 years after the date of grant. There are no options outstanding under the Directors Plan during the periods presented. Information with respect to grants under the Stock Plans follows.

Stock Options

The following table presents a summary of stock option activity:

	Number of Options	Weighted-Average Exercise Price	Aggregate Intrinsic Value (in millions)
Outstanding December 31, 2015	2,825,440	\$ 62.82	
Granted	329,345	\$ 93.53	
Exercised	(577,071)	\$ 54.06	
Forfeited	(4,491)	\$ 71.21	
Outstanding December 31, 2016	2,573,223	\$ 68.70	\$ 147.0
Options exercisable	1,888,577	\$ 60.43	\$ 123.5

The intrinsic value of options exercised was \$41.4 million, \$26.2 million, and \$17.0 million for 2016, 2015 and 2014, respectively.

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding as of 12/31/2016	Weighted-Average Remaining Contractual Life (years)	Weighted-Average Exercise Price	Number Exercisable as of 12/31/2016	Weighted-Average Exercise Price
\$0.00 - \$49.99	307,889	2.5	\$ 40.35	307,889	\$ 40.35
\$50.00 - \$59.99	1,224,805	4.9	\$ 58.11	1,224,805	\$ 58.11
\$60.00 - \$69.99	839	6.0	\$ 60.24	839	\$ 60.24
\$70.00 - \$79.99	211,708	7.0	\$ 78.48	154,393	\$ 78.48
\$90.00 +	827,982	8.7	\$ 92.41	200,651	\$ 91.48
Totals	2,573,223	6.0	\$ 68.70	1,888,577	\$ 60.43

The following table presents the weighted average assumptions used to determine the fair value of stock options issued:

For the years ended December 31,	2016	2015	2014
Dividend yield	1.58%	1.47%	1.53%
Risk-free rate of return	1.69%	2.04%	2.27%
Expected volatility	28.1%	35.0%	35.7%
Expected life (years)	7.0	7.0	7.0
Weighted average exercise price of stock options granted	\$ 93.53	\$ 91.65	\$ 78.48
Weighted average fair value of stock options granted	\$ 24.52	\$ 30.05	\$ 26.76

The Black-Scholes model was used to determine the fair value recognized in the financial statements of stock options that have been granted. The Company used daily historical volatility when calculating stock option values. The benchmark rate is based on observed interest rates for instruments with maturities similar to the expected term of the stock options. Dividend yield is determined based on historical dividend distributions compared to the price of the underlying common stock as of the valuation date and held constant over the life of the stock options. The Company estimated expected life using the historical average years to exercise or cancellation.

Performance Shares

Performance shares, also referred to as performance contingent units (“PCUs”), are units that, if they vest, are multiplied by a performance factor to produce a number of final PCUs which are paid in the Company’s common stock. Each PCU represents the right to receive up to two shares of Company common stock, depending on the results of certain performance measures over a three-year period. The compensation expense related to the PCUs is recognized ratably over the requisite performance period. Performance shares are accounted for as equity awards, but are not credited with dividend-equivalents for actual dividends paid on the Company’s common stock during the performance period.

Restricted Stock Units

In general, restricted stock units (“RSUs”) become payable at the end of a three- or ten-year vesting period. Each RSU, if they vest, represents the right to receive one share of Company common stock. RSUs awarded under the plan generally have no strike price and are included in the Company’s shares outstanding.

The following table presents a summary of Performance Share and Restricted Stock Unit activity:

	Performance Contingent Units	Restricted Stock Units
Outstanding December 31, 2015	631,322	70,887
Granted	206,550	28,995
Paid	(94,436)	—
Forfeited	(157,465)	(3,254)
Outstanding December 31, 2016	585,971	96,628

During 2016, the Company issued 206,550 PCUs to key employees at a weighted average fair value per unit of \$93.53. In May 2016 and May 2015, RGA’s board of directors approved a 0.40 and 0.82 share payout for each PCU granted in 2013 and 2012, resulting in the issuance of 94,436 and 192,725 shares of common stock from treasury, respectively.

As of December 31, 2016, the total compensation cost of non-vested awards not yet recognized in the financial statements was \$29.7 million. It is estimated that these costs will vest over a weighted average period of 1.6 years.

The majority of the awards granted each year under the board-approved incentive compensation package and Directors Plan are made in the first quarter of each year.

Note 19 QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

Years Ended December 31,

(in thousands, except per share data)

	First	Second	Third	Fourth
2016				
Total Revenues	\$ 2,512,568	\$ 3,039,068	\$ 2,900,577	\$ 3,069,298
Total benefits and expenses	2,404,988	2,685,845	2,612,977	2,773,755
Income before income taxes	107,580	353,223	287,600	295,543
Net Income	76,472	236,103	198,719	190,149
Earnings Per Share:				
Basic earnings per share	\$ 1.18	\$ 3.68	\$ 3.10	\$ 2.96
Diluted earnings per share	1.17	3.64	3.07	2.92
2015				
Total Revenues	\$ 2,520,613	\$ 2,630,340	\$ 2,438,634	\$ 2,828,591
Total benefits and expenses	2,336,488	2,416,550	2,298,497	2,621,848
Income before income taxes	184,125	213,790	140,137	206,743
Net Income	125,114	130,391	83,534	163,127
Earnings Per Share:				
Basic earnings per share	\$ 1.84	\$ 1.97	\$ 1.26	\$ 2.49
Diluted earnings per share	1.81	1.94	1.25	2.46

Note 20 SUBSEQUENT EVENTS

On January 4, 2017, the International Swaps and Derivatives Association (“ISDA”) issued a confirmation letter endorsing the amendment to the Chicago Mercantile Exchange and LCH. Clearnet Limited respective rulebooks on the treatment of variation margin on centrally cleared swaps as a settlement of the derivative’s fair value and not collateral. This change in accounting for cleared swaps would have caused a \$53.1 million decrease in other invested assets and other liabilities for the Company as of December 31, 2016 related to the decrease in derivative fair value and related collateral. There would have been no income statement impact from the change in accounting for variation margin.

On January 26, 2017, RGA’s board of directors authorized a share repurchase program for up to \$400.0 million of RGA’s outstanding common stock. The authorization was effective immediately and does not have an expiration date. Repurchases would be made in accordance with applicable securities laws and would be made through market transactions, block trades, privately negotiated transactions or other means or a combination of these methods, with the timing and number of shares repurchased dependent on a variety of factors, including share price, corporate and regulatory requirements and market and business conditions. Repurchases may be commenced or suspended from time to time without prior notice. In connection with this new authorization, the board of directors terminated the stock repurchase authority granted in 2016.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Reinsurance Group of America, Incorporated
Chesterfield, Missouri

We have audited the accompanying consolidated balance sheets of Reinsurance Group of America, Incorporated and subsidiaries (the “Company”) as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2016. Our audits also included the financial statement schedules listed in the Index at Item 15. These consolidated financial statements and financial statement schedules are the responsibility of the Company’s management. Our responsibility is to express an opinion on the financial statements and financial statement schedules based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Reinsurance Group of America, Incorporated and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedules, when considered in relation to the basic consolidated financial statements taken as a whole, present fairly, in all material respects, the information set forth therein.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company’s internal control over financial reporting as of December 31, 2016, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 28, 2017, expressed an unqualified opinion on the Company’s internal control over financial reporting.

/s/ DELOITTE & TOUCHE LLP

St. Louis, Missouri
February 28, 2017

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

The Chief Executive Officer and the Chief Financial Officer have evaluated the effectiveness of the design and operation of the Company's disclosure controls and procedures as defined in Exchange Act Rule 13a-15(e) as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that these disclosure controls and procedures were effective.

There was no change in the Company's internal control over financial reporting as defined in Exchange Act Rule 13a-15(f) during the quarter ended December 31, 2016, that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Management's Annual Report on Internal Control Over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of control procedures. The objectives of internal control include providing management with reasonable, but not absolute, assurance that assets are safeguarded against loss from unauthorized use or disposition, and that transactions are executed in accordance with management's authorization and recorded properly to permit the preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America.

Financial management has documented and evaluated the effectiveness of the internal control of the Company as of December 31, 2016 pertaining to financial reporting in accordance with the criteria established in "Internal Control – Integrated Framework (2013)" by the Committee of Sponsoring Organizations of the Treadway Commission.

In the opinion of management, the Company maintained effective internal control over financial reporting as of December 31, 2016.

Deloitte & Touche LLP, an independent registered public accounting firm, has issued an attestation report on the effectiveness of the Company's internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Reinsurance Group of America, Incorporated
Chesterfield, Missouri

We have audited the internal control over financial reporting of Reinsurance Group of America, Incorporated and subsidiaries (the “Company”) as of December 31, 2016, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management’s Report on Internal Control over Financial Reporting*. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company’s internal control over financial reporting is a process designed by, or under the supervision of, the company’s principal executive and principal financial officers, or persons performing similar functions, and effected by the company’s board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements and financial statement schedules as of and for the year ended December 31, 2016, of the Company and our report dated February 28, 2017, expressed an unqualified opinion on those consolidated financial statements and financial statement schedules.

/s/ DELOITTE & TOUCHE LLP

St. Louis, Missouri
February 28, 2017

Item 9B. OTHER INFORMATION

None.

Part III

Item 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

Information with respect to Directors of the Company is incorporated by reference to the Proxy Statement under the captions “Nominees and Continuing Directors” and “Section 16(a) Beneficial Ownership Reporting Compliance”. The Proxy Statement will be filed pursuant to Regulation 14A within 120 days of the end of the Company’s fiscal year.

Executive Officers

The following is certain additional information concerning each individual who is an executive officer of the Company or its primary U.S.-based operating subsidiary, RGA Reinsurance Company.

John W. Hayden, 50, is Senior Vice President, Controller. Mr. Hayden joined the Company in March 2000 and held the position of Vice President, SEC Reporting and Investor Relations prior to his current role. Before coming to RGA, Mr. Hayden served in a finance position at General American Life Insurance Company and prior to that position, he was a senior manager at KPMG LLP, in the financial services audit practice, specializing in the insurance industry. Mr. Hayden also serves as a director and officer of several RGA subsidiaries.

William L. Hutton, 57, is Executive Vice President, General Counsel and Secretary of the Company. He is responsible for legal services provided throughout the RGA enterprise. Mr. Hutton joined the Company in 2001 and held several positions in the legal function before becoming General Counsel in 2011. Prior to joining the Company, he served as counsel at General American Life Insurance Company and was in private practice with two law firms in St. Louis, Missouri. Mr. Hutton also serves as an officer of several RGA subsidiaries.

Todd C. Larson, 53, is Senior Executive Vice President, Chief Financial Officer. Mr. Larson joined the Company in May 1995 as Controller and held several positions in the finance function, including the position of Executive Vice President, Corporate Finance and Treasurer, before becoming Global Chief Risk Officer in July 2014. Mr. Larson assumed the role of Chief Financial Officer in May 2016. Mr. Larson previously was Assistant Controller at Northwestern Mutual Life Insurance Company from 1994 through 1995 and prior to that position was an accountant for KPMG LLP from 1985 through 1993. Mr. Larson also serves as a director and officer of several RGA subsidiaries.

John P. Laughlin, 62, is Executive Vice President of Global Financial Solutions (“GFS”). He is also a member of the Company’s Executive Council. Mr. Laughlin joined the Company in 1995 through a joint venture acquisition that ultimately became RGA Financial Group, L.L.C. Mr. Laughlin heads the Company’s GFS unit, which is responsible for all of RGA’s financial reinsurance, asset-intensive reinsurance and bulk longevity business worldwide. Prior to joining the Company, Mr. Laughlin worked at ITT Financial Corporation and Liberty Financial Management. Mr. Laughlin also serves as a director and officer of several RGA subsidiaries.

Anna Manning, 58, is President and Chief Executive Officer of the Company. Prior to her current role, Ms. Manning held the position of Senior Executive Vice President, Structured Solutions, which includes the Company’s Global Financial Solutions and Global Acquisitions businesses. She is a member of RGA’s Executive Council. Ms. Manning joined the Company in 2007 as Executive Vice President and Chief Operating Officer for RGA International Corporation, followed by four years as Executive Vice President of U.S. Markets. Prior to joining the Company, Ms. Manning spent 19 years in actuarial consulting at Tillinghast Towers Perrin, following an actuarial career in the Canadian marketplace at Manulife Financial from 1981 through 1988. She is a Fellow of the Canadian Institute of Actuaries (“FCIA”), and a Fellow of the Society of Actuaries (“FSA”).

Timothy Matson, 58, is Executive Vice President, Chief Investment Officer. Mr. Matson joined the Company in August, 2014 and is responsible for directing RGA’s investment policy and strategy, and for managing the company’s global asset portfolio. Before joining the Company, he held investment management positions with Aetna and ING, in both the U.S. and Asia, and was the Chief Investment Officer of Cathay Conning Asset Management (“CCAM”), a joint venture based in Hong Kong. Mr. Matson also serves as a director and officer of several RGA subsidiaries.

Alain Néemeh, 49, is Senior Executive Vice President, Chief Operating Officer. He is also a member of the Company’s Executive Council. Prior to his current role, Mr. Néemeh was Senior Executive Vice President, Global Life and Health, a position he held since 2014. From 2006 to 2014, Mr. Néemeh was President and Chief Executive Officer of RGA Life Reinsurance Company of Canada (“RGA Canada”). In addition, from 2012, Mr. Néemeh had executive responsibility for the Company’s Australia and New Zealand operations. Prior to this, he served as Executive Vice President, Operations, and Chief Financial Officer of RGA.

Canada from 2001, having joined the finance area in 1997 from KPMG LLP, where he provided audit and other services to a variety of clients in the financial services, manufacturing and retail sectors. Mr. Néemeh also serves as a director and officer of several RGA subsidiaries.

Jonathan Porter, 46, is Executive Vice President and Global Chief Risk Officer. Mr. Porter is responsible for the Company's global enterprise risk management and corporate pricing oversight. Prior to his current role, Mr. Porter previously served in positions of Senior Vice President, Global Analytics and In-Force Management and Chief Pricing Actuary of International Markets. Before joining the Company in 2008, Mr. Porter worked for Manulife Financial as Chief Financial Officer, U.S. Life Insurance. Mr. Porter holds FSA and FCIA designations. Mr. Porter also serves as a director and officer of several RGA subsidiaries.

Corporate Governance

The Company has adopted a Principles of Ethical Business Conduct (the "Principles"), a Directors' Code of Conduct (the "Directors' Code"), and a Financial Management Code of Professional Conduct (the "Financial Management Code"). The Principles apply to all employees and officers of the Company and its subsidiaries. The Directors' Code applies to directors of the Company and its subsidiaries. The Financial Management Code applies to the Company's chief executive officer, chief financial officer, corporate controller, primary financial officers in each business unit, and all professionals in finance and finance-related departments. The Company intends to satisfy its disclosure obligations under Item 5.05 of Form 8-K by posting on its website information about amendments to, or waivers from a provision of the Financial Management Code that applies to the Company's chief executive officer, chief financial officer, and corporate controller. Each of the three Codes described above is available on the Company's website at www.rgare.com.

Also available on the Company's website are the following other items: Corporate Governance Guidelines, Audit Committee Charter, Compensation Committee Charter, Nominating and Governance Committee Charter and Finance, Investment and Risk Management Committee Charter (collectively "Governance Documents").

The Company will provide without charge upon written or oral request, a copy of any of the Codes of Conduct or Governance Documents. Requests should be directed to Investor Relations, Reinsurance Group of America, Incorporated, 16600 Swingley Ridge Road, Chesterfield, MO 63017, by electronic mail (investrelations@rgare.com) or by telephone (636-736-2068).

In accordance with the Securities Exchange Act of 1934, the Company's board of directors has established a standing audit committee. The board of directors has determined, in its judgment, that all of the members of the audit committee are independent within the meaning of SEC regulations and the listing standards of the New York Stock Exchange ("NYSE"). The board of directors has determined, in its judgment, that Messrs. Bartlett, Boot, Danahy and Ms. Detrick are qualified as audit committee financial experts within the meaning of SEC regulations and the board has determined that each of them has accounting and related financial management expertise within the meaning of the listing standards of the NYSE. The audit committee charter provides that members of the audit committee may not simultaneously serve on the audit committee of more than two other public companies unless such member demonstrates that he or she has the ability to devote the time and attention that are required to serve on multiple audit committees.

Additional information with respect to Directors and Executive Officers of the Company is incorporated by reference to the Proxy Statement under the captions "Nominees and Continuing Directors", "Board of Directors and Committees", and "Section 16(a) Beneficial Ownership Reporting Compliance."

Item 11. EXECUTIVE COMPENSATION

Information on this subject is found in the Proxy Statement under the captions “Compensation Discussion and Analysis”, “Executive Compensation,” “Compensation Committee Report” and “Director Compensation” and is incorporated herein by reference. The Proxy Statement will be filed pursuant to Regulation 14A within 120 days of the end of the Company’s fiscal year.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDERS MATTERS

Information of this subject is found in the Proxy Statement under the captions “Securities Ownership of Directors, Management and Certain Beneficial Owners”, and is incorporated herein by reference. The Proxy Statement will be filed pursuant to Regulations 14A within 120 days of the end of the Company’s fiscal year.

The following table summarizes information regarding securities authorized for issuance under equity compensation plans:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	3,295,905 ⁽¹⁾	\$68.70 ^{(2) (3)}	983,786 ⁽⁴⁾
Equity compensation plans not approved by security holders	—	—	—
Total	3,295,905 ⁽¹⁾	\$68.70 ^{(2) (3)}	983,786 ⁽⁴⁾

(1) Includes the number of securities to be issued upon exercises under the following plans: Flexible Stock Plan - 3,255,822; and Phantom Stock Plan for Directors – 40,083.

(2) Does not include 585,971 performance contingent units outstanding under the Flexible Stock Plan or 40,083 phantom units outstanding under the Phantom Stock Plan for Directors because those securities do not have an exercise price (i.e. a unit is a hypothetical share of Company common stock with a value equal to the fair market value of the common stock).

(3) Reflects the blended weighted-average exercise price of outstanding options under the Flexible Stock Plan \$68.70.

(4) Includes the number of securities remaining available for future issuance under the following plans: Flexible Stock Plan– 965,562; Flexible Stock Plan for Directors – 12,074; and Phantom Stock Plan for Directors – 6,150.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information on this subject is found in the Proxy Statement under the captions “Certain Relationships and Related Person Transactions” and “Director Independence” and incorporated herein by reference. The Proxy Statement will be filed pursuant to Regulation 14A within 120 days of the end of the Company’s fiscal year.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information on this subject is found in the Proxy Statement under the caption “Ratification of Appointment of the Independent Auditor” and incorporated herein by reference. The Proxy Statement will be filed pursuant to Regulation 14A within 120 days of the end of the Company’s fiscal year.

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) 1. Financial Statements

The following consolidated statements are included within Item 8 under the following captions:

Index	Page
Consolidated Balance Sheets	80
Consolidated Statements of Income	81
Consolidated Statements of Comprehensive Income	82
Consolidated Statements of Stockholders' Equity	83
Consolidated Statements of Cash Flows	84
Notes to Consolidated Financial Statements	85-152
Report of Independent Registered Public Accounting Firm	153

2. Schedules, Reinsurance Group of America, Incorporated and Subsidiaries

Schedule	Page
I Summary of Investments	160
II Condensed Financial Information of the Registrant	161-162
III Supplementary Insurance Information	163-164
IV Reinsurance	165
V Valuation and Qualifying Accounts	166

All other schedules specified in Regulation S-X are omitted for the reason that they are not required, are not applicable, or that equivalent information has been included in the consolidated financial statements, and notes thereto, appearing in Item 8.

3. Exhibits

See the Index to Exhibits on page [168](#).

Item 16. FORM 10-K SUMMARY

None.

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE I-SUMMARY OF INVESTMENTS-OTHER THAN
INVESTMENTS IN RELATED PARTIES

December 31, 2016

(in millions)

Type of Investment	Cost	Fair Value	Amount at Which Shown in the Balance Sheets ⁽¹⁾
Fixed maturity securities:			
Bonds:			
United States government and government agencies and authorities	\$ 1,519	\$ 1,468	\$ 1,468
State and political subdivisions	567	592	592
Foreign governments ⁽²⁾	5,157	6,343	6,343
Public utilities	1,971	2,091	2,091
Mortgage-backed and asset-backed securities	4,044	4,072	4,072
All other corporate bonds	16,954	17,528	17,528
Total fixed maturity securities	30,212	32,094	32,094
Equity securities:			
Non-redeemable preferred stock	56	51	51
Other equity securities	230	224	224
Total equity securities	286	275	275
Mortgage loans on real estate	3,776		3,776
Policy loans	1,428		1,428
Funds withheld at interest	5,876		5,876
Short-term investments	77		77
Other invested assets	1,315		1,315
Total investments	\$ 42,970		\$ 44,841

(1) Fixed maturity securities are classified as available-for-sale and carried at fair value.

(2) Includes fixed maturities directly issued by foreign governments, supranational and foreign government-sponsored enterprises.

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE II—CONDENSED FINANCIAL INFORMATION OF THE REGISTRANT
December 31,
(dollars in thousands)

	2016	2015	2014
CONDENSED BALANCE SHEETS			
Assets:			
Fixed maturity securities available-for-sale, at fair value	\$ 1,154,559	\$ 426,218	
Short-term and other investments	245,478	254,398	
Cash and cash equivalents	43,718	39,452	
Investment in subsidiaries	9,209,700	8,110,687	
Loans to subsidiaries	1,050,000	1,070,000	
Other assets	258,379	309,340	
Total assets	\$ 11,961,834	\$ 10,210,095	
Liabilities and stockholders' equity:			
Long-term debt - unaffiliated ⁽¹⁾	\$ 3,073,249	\$ 2,279,663	
Long-term debt - affiliated ⁽²⁾	500,000	500,000	
Other liabilities	1,295,503	1,295,051	
Stockholders' equity	7,093,082	6,135,381	
Total liabilities and stockholders' equity	\$ 11,961,834	\$ 10,210,095	
CONDENSED STATEMENTS OF INCOME			
Interest / dividend income ⁽³⁾	\$ 602,830	\$ 321,645	\$ 521,623
Investment related gains (losses), net	203	(324)	4,936
Operating expenses	(20,742)	(13,652)	(10,751)
Interest expense	(168,924)	(176,364)	(131,852)
Income (loss) before income tax and undistributed earnings of subsidiaries	413,367	131,305	383,956
Income tax expense (benefit)	(23,911)	(19,465)	(22,008)
Net income (loss) before undistributed earnings of subsidiaries	437,278	150,770	405,964
Equity in undistributed earnings of subsidiaries	264,165	351,396	278,083
Net income	701,443	502,166	684,047
Other comprehensive income	5,531	44,073	36,876
Total comprehensive income	\$ 706,974	\$ 546,239	\$ 720,923

The condensed financial information of RGA (the "Parent Company") should be read in conjunction with the consolidated financial statements of RGA and its subsidiaries and the notes thereto (the "Consolidated Financial Statements"). These condensed unconsolidated financial statements reflect the results of operations, financial position and cash flows for RGA. Investments in subsidiaries are accounted for using the equity method of accounting.

(1) Long-term debt - unaffiliated consists of the following:

	2016	2015
\$300 million 5.625% Senior Notes due 2017	\$ 299,945	\$ 299,671
\$400 million 6.45% Senior Notes due 2019	399,805	399,737
\$400 million 5.00% Senior Notes due 2021	399,025	398,803
\$400 million 4.70% Senior Notes due 2023	398,986	398,835
\$400 million 3.95% Senior Notes due 2026	399,985	—
\$400 million 6.20% Subordinated Debentures due 2042	400,000	400,000
\$400 million 5.75% Subordinated Debentures due 2056	400,000	—
\$400 million Variable Rate Junior Subordinated Debentures due 2065	398,667	398,663
Subtotal	3,096,413	2,295,709
Unamortized debt issue costs	(23,164)	(16,046)
Total	\$ 3,073,249	\$ 2,279,663

Repayments of long-term debt—unaffiliated due over the next five years total \$300,000 in 2017, \$400,000 in 2019 and \$400,000 in 2021.

(2) Long-term debt—affiliated in 2016 and 2015 and consists of \$500,000 of subordinated debt issued to various operating subsidiaries.

(3) Interest/Dividend income includes \$478,602, \$196,445 and \$423,323 of cash dividends received from consolidated subsidiaries in 2016, 2015 and 2014, respectively.

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE II—CONDENSED FINANCIAL INFORMATION OF THE REGISTRANT (continued)
December 31,
(dollars in thousands)

	2016	2015	2014
CONDENSED STATEMENTS OF CASH FLOWS			
Operating activities:			
Net income	\$ 701,443	\$ 502,166	\$ 684,047
Equity in earnings of subsidiaries	(264,165)	(351,396)	(278,083)
Other, net	(63,795)	486,159	(171,299)
Net cash provided by operating activities	<u>\$ 373,483</u>	<u>\$ 636,929</u>	<u>\$ 234,665</u>
Investing activities:			
Sales of fixed maturity securities available-for-sale	\$ 228,383	\$ 100,734	\$ 132,732
Purchases of fixed maturity securities available-for-sale	(984,397)	(52,698)	(105,535)
Repayments/issuances of loans to subsidiaries	20,000	(10,000)	41,751
Purchase of a business, net of cash acquired of \$529	—	(3,701)	—
Change in short-term investments	102,508	(102,508)	96,967
Change in other invested assets	(109,914)	(7,542)	126,397
Capital contributions to subsidiaries	(314,142)	(103,832)	(222,760)
Net cash (used in) provided by investing activities	<u>(1,057,562)</u>	<u>(179,547)</u>	<u>69,552</u>
Financing activities:			
Dividends to stockholders	(100,371)	(93,381)	(87,256)
Purchases of treasury stock	(122,916)	(384,519)	(201,525)
Exercise of stock options, net	15,321	11,151	9,246
Net change in cash collateral for loaned securities	105,093	—	—
Proceeds from unaffiliated long-term debt issuance	799,984	—	—
Debt issuance costs	(8,766)	—	—
Net cash (used in) provided by financing activities	<u>688,345</u>	<u>(466,749)</u>	<u>(279,535)</u>
Net change in cash and cash equivalents	4,266	(9,367)	24,682
Cash and cash equivalents at beginning of year	39,452	48,819	24,137
Cash and cash equivalents at end of year	<u>\$ 43,718</u>	<u>\$ 39,452</u>	<u>\$ 48,819</u>
Supplementary information:			
Cash paid for interest	\$ 169,860	\$ 165,775	\$ 161,499
Cash paid for income taxes, net of refunds	\$ 1,500	\$ (120,680)	\$ 87

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE III—SUPPLEMENTARY INSURANCE INFORMATION
(dollars in thousands)

	As of December 31,		
	Deferred Policy Acquisition Costs	Future Policy Benefits and Interest-Sensitive Contract Liabilities	Other Policy Claims and Benefits Payable
2016			
U.S. and Latin America operations:			
Traditional operations	\$ 1,818,211	\$ 10,990,560	\$ 1,659,473
Financial Solutions operations	582,031	13,074,231	20,352
Canada operations:			
Traditional operations	201,149	2,713,510	200,246
Financial Solutions operations	—	29,531	4,599
Europe, Middle East and Africa operations:			
Traditional operations	206,837	913,351	740,218
Financial Solutions operations	—	3,457,196	46,761
Asia Pacific operations:			
Traditional operations	512,123	1,288,642	1,563,707
Financial Solutions operations	18,254	641,614	19,643
Corporate and Other	—	502,292	8,027
Total	<u>\$ 3,338,605</u>	<u>\$ 33,610,927</u>	<u>\$ 4,263,026</u>
2015			
U.S. and Latin America operations:			
Traditional operations	\$ 1,807,407	\$ 10,593,424	\$ 1,681,130
Financial Solutions operations	691,944	12,882,145	16,430
Canada operations:			
Traditional operations	197,243	2,498,385	160,478
Financial Solutions operations	—	26,547	2,829
Europe, Middle East and Africa operations:			
Traditional operations	236,194	1,104,771	754,573
Financial Solutions operations	—	3,994,702	35,801
Asia Pacific operations:			
Traditional operations	457,372	1,115,987	1,420,248
Financial Solutions operations	2,277	758,301	14,634
Corporate and Other	—	301,862	8,517
Total	<u>\$ 3,392,437</u>	<u>\$ 33,276,124</u>	<u>\$ 4,094,640</u>

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE III—SUPPLEMENTARY INSURANCE INFORMATION (continued)
(dollars in thousands)

	Year ended December 31,				
	Premium Income	Net Investment Income	Policyholder Benefits and Interest Credited	Amortization of DAC ⁽¹⁾	Other Operating Expenses
2016					
U.S. and Latin America operations:					
Traditional operations	\$ 5,249,571	\$ 699,833	\$ 4,717,850	\$ 177,255	\$ 698,762
Financial Solutions operations	24,349	631,097	333,107	133,501	90,458
Canada operations:					
Traditional operations	928,642	178,927	707,428	10,621	265,250
Financial Solutions operations	38,701	2,692	36,275	—	2,718
Europe, Middle East and Africa operations:					
Traditional operations	1,140,062	50,301	999,005	33,795	132,290
Financial Solutions operations	180,271	125,282	178,014	—	24,497
Asia Pacific operations:					
Traditional operations	1,681,505	83,049	1,345,951	24,597	286,674
Financial Solutions operations	5,428	23,648	37,976	1,423	19,920
Corporate and Other	342	117,057	2,460	—	217,738
Total	\$ 9,248,871	\$ 1,911,886	\$ 8,358,066	\$ 381,192	\$ 1,738,307
2015					
U.S. and Latin America operations:					
Traditional operations	\$ 4,806,706	\$ 636,779	\$ 4,444,196	\$ 131,439	\$ 653,620
Financial Solutions operations	22,177	566,180	310,464	40,416	85,022
Canada operations:					
Traditional operations	838,894	182,621	670,477	11,299	217,061
Financial Solutions operations	37,969	1,436	29,251	—	1,881
Europe, Middle East and Africa operations:					
Traditional operations	1,121,540	51,370	979,225	39,164	123,943
Financial Solutions operations	171,830	73,432	161,917	—	16,304
Asia Pacific operations:					
Traditional operations	1,551,586	80,549	1,208,984	7,373	316,346
Financial Solutions operations	19,474	18,678	20,766	185	16,011
Corporate and Other	565	123,450	1,066	—	186,973
Total	\$ 8,570,741	\$ 1,734,495	\$ 7,826,346	\$ 229,876	\$ 1,617,161
2014					
U.S. and Latin America operations:					
Traditional operations	\$ 4,725,505	\$ 552,805	\$ 4,181,492	\$ 467,067	\$ 283,064
Financial Solutions operations	20,079	644,285	402,387	203,605	105,207
Canada operations:					
Traditional operations	953,389	193,610	784,470	190,164	83,446
Financial Solutions operations	21,192	2,595	20,116	—	1,969
Europe, Middle East and Africa operations:					
Traditional operations	1,157,407	52,086	1,013,331	43,549	117,864
Financial Solutions operations	216,562	55,043	204,110	—	17,351
Asia Pacific operations:					
Traditional operations	1,540,910	84,489	1,208,611	74,571	312,652
Financial Solutions operations	34,030	17,972	42,351	409	15,829
Corporate and Other	780	110,806	804	—	121,242
Total	\$ 8,669,854	\$ 1,713,691	\$ 7,857,672	\$ 979,365	\$ 1,058,624

(1) During 2015, the Company enhanced its process to track certain DAC components. See Note 8 - "Deferred Policy Acquisition Costs" in the Notes to Consolidated Financial Statements for additional information.

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE IV—REINSURANCE
(in millions)

	As of or for the Year ended December 31,					
	Gross Amount	Ceded to Other Companies	Assumed from Other Companies	Net Amounts	Percentage of Amount Assumed to Net	
2016						
Life insurance in force	\$ 1,576	\$ 214,727	\$ 3,062,525	\$ 2,849,374	107.5%	
Premiums						
U.S. and Latin America operations:						
Traditional operations	\$ 31.6	\$ 616.0	\$ 5,834.0	\$ 5,249.6	111.1%	
Financial Solutions operations	1.6	40.2	63.0	24.4	258.2	
Canada operations:						
Traditional operations	—	36.5	965.1	928.6	103.9	
Financial Solutions operations	—	—	38.7	38.7	100.0	
Europe, Middle East and Africa operations:						
Traditional operations	24.1	30.9	1,146.9	1,140.1	100.6	
Financial Solutions operations	0.3	84.4	264.4	180.3	146.6	
Asia Pacific operations:						
Traditional operations	—	50.3	1,731.8	1,681.5	103.0	
Financial Solutions operations	—	—	5.4	5.4	100.0	
Corporate and Other	—	—	0.3	0.3	100.0	
Total	<u>\$ 57.6</u>	<u>\$ 858.3</u>	<u>\$ 10,049.6</u>	<u>\$ 9,248.9</u>	<u>108.7</u>	
2015						
Life insurance in force	\$ 1,686	\$ 222,388	\$ 2,995,079	\$ 2,774,377	108.0%	
Premiums						
U.S. and Latin America operations:						
Traditional operations	\$ 29.4	\$ 607.0	\$ 5,384.3	\$ 4,806.7	112.0%	
Financial Solutions operations	2.9	38.8	58.1	22.2	261.7	
Canada operations:						
Traditional operations	—	42.3	881.2	838.9	105.0	
Financial Solutions operations	—	—	38.0	38.0	100.0	
Europe, Middle East and Africa operations:						
Traditional operations	10.7	25.5	1,136.3	1,121.5	101.3	
Financial Solutions operations	0.1	89.1	260.8	171.8	151.8	
Asia Pacific operations:						
Traditional operations	—	41.0	1,592.6	1,551.6	102.6	
Financial Solutions operations	—	—	19.5	19.5	100.0	
Corporate and Other	—	—	0.5	0.5	100.0	
Total	<u>\$ 43.1</u>	<u>\$ 843.7</u>	<u>\$ 9,371.3</u>	<u>\$ 8,570.7</u>	<u>109.3</u>	
2014						
Life insurance in force	\$ 78	\$ 230,544	\$ 2,943,517	\$ 2,713,051	108.5%	
Premiums						
U.S. and Latin America operations:						
Traditional operations	\$ 9.6	\$ 287.8	\$ 5,003.7	\$ 4,725.5	105.9%	
Financial Solutions operations	—	39.4	59.5	20.1	296.0	
Canada operations:						
Traditional operations	—	49.6	1,002.9	953.3	105.2	
Financial Solutions operations	—	—	21.3	21.3	100.0	
Europe, Middle East and Africa operations:						
Traditional operations	9.8	30.4	1,178.0	1,157.4	101.8	
Financial Solutions operations	—	—	216.6	216.6	100.0	
Asia Pacific operations:						
Traditional operations	—	40.7	1,581.6	1,540.9	102.6	
Financial Solutions operations	—	—	34.0	34.0	100.0	
Corporate and Other	—	—	0.8	0.8	100.0	
Total	<u>\$ 19.4</u>	<u>\$ 447.9</u>	<u>\$ 9,098.4</u>	<u>\$ 8,669.9</u>	<u>104.9</u>	

REINSURANCE GROUP OF AMERICA, INCORPORATED
SCHEDULE V—VALUATION AND QUALIFYING ACCOUNTS
(in millions)

Description	Balance at Beginning of Period	Additions		Deductions	Balance at End of Period
		Charged to Costs and Expenses	Charged to Other Accounts		
2016					
Valuation allowance for deferred income taxes	\$ 127.1	\$ 11.0	\$ (4.7)	\$ —	\$ 133.4
Valuation allowance for mortgage loans	6.8	0.9	—	—	7.7
2015					
Valuation allowance for deferred income taxes	\$ 112.0	\$ 23.7	\$ (8.6)	\$ —	\$ 127.1
Valuation allowance for mortgage loans	6.5	0.3	—	—	6.8
2014					
Valuation allowance for deferred income taxes	\$ 102.2	\$ 15.9	\$ (6.1)	\$ —	\$ 112.0
Valuation allowance for mortgage loans	10.1	(0.9)	—	2.7	6.5

SIGNATURES

Pursuant to the requirements of Section 13 or 15 (d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Reinsurance Group of America, Incorporated.

By: /s/ Anna Manning
Anna Manning
President and Chief Executive Officer

Date: February 28, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities indicated on February 28, 2017.

<u>Signatures</u>	<u>Title</u>
<u>/s/ J. Cliff Eason</u> J. Cliff Eason	February 28, 2017* Chairman of the Board and Director
<u>/s/ Anna Manning</u> Anna Manning	February 28, 2017 President, Chief Executive Officer and Director (Principal Executive Officer)
<u>/s/ William J. Bartlett</u> William J. Bartlett	February 28, 2017* Director
<u>/s/ Arnoud W.A. Boot</u> Arnoud W.A. Boot	February 28, 2017* Director
<u>/s/ John F. Danahy</u> John F. Danahy	February 28, 2017* Director
<u>/s/ Christine R. Detrick</u> Christine R. Detrick	February 28, 2017* Director
<u>/s/ Patricia L. Guinn</u> Patricia L. Guinn	February 28, 2017* Director
<u>/s/ Alan C. Henderson</u> Alan C. Henderson	February 28, 2017* Director
<u>/s/ Joyce A. Phillips</u> Joyce A. Phillips	February 28, 2017* Director
<u>/s/ Frederick J. Sievert</u> Frederick J. Sievert	February 28, 2017* Director
<u>/s/ Stanley B. Tulin</u> Stanley B. Tulin	February 28, 2017* Director
<u>/s/ Todd C. Larson</u> Todd C. Larson	February 28, 2017 Senior Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)

* By: /s/ Todd C. Larson
Todd C. Larson February 28, 2017
Attorney-in-fact

Index to Exhibits

<u>Exhibit Number</u>	<u>Description</u>
2.1	Reinsurance Agreement, dated as of December 31, 1992 between General American Life Insurance Company (“General American”) and General American Life Reinsurance Company of Canada (“RGA Canada”), incorporated by reference to Exhibit 2.1 to Amendment No. 1 to Registration Statement on Form S-1 (File No. 33-58960), filed on April 14, 1993 (“Amendment No. 1 to the Original S-1”)
2.2	Retrocession Agreement, dated as of July 1, 1990 between General American and The National Reinsurance Company of Canada, as amended between RGA Canada and General American on December 31, 1992, incorporated by reference to Exhibit 2.2 to Amendment No. 1 to the Original S-1
2.3	Reinsurance Agreement, dated as of January 1, 1993 between RGA Reinsurance Company (formerly “Saint Louis Reinsurance Company”) and General American, incorporated by reference to Exhibit 2.3 to Amendment No. 1 to the Original S-1
3.1	Amended and Restated Articles of Incorporation, incorporated by reference to Exhibit 3.1 to Current Report on Form 8-K filed on November 25, 2008 (File No. 1-11848)
3.2	Amended and Restated Bylaws, incorporated by reference to Exhibit 3.1 to Current Report on Form 8-K filed on July 18, 2014 (File No. 1-11848)
4.1	Form of stock certificate for RGA’s common stock, incorporated by reference to Exhibit 4 to RGA’s Registration Statement on Form 8-A filed on November 17, 2008
4.2	Form of Senior Indenture between RGA and The Bank of New York, as Trustee, incorporated by reference to Exhibit 4.1 to Registration Statement on Form S-3 (File Nos. 333-55304), filed on February 9, 2001, as amended (the “Original S-3”)
4.3	Second Supplemental Senior Indenture, dated as of March 9, 2007, between RGA and The Bank of New York Trust Company, N.A., as successor trustee to The Bank of New York, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on March 12, 2007 (File No. 1-11848)
4.4	Third Supplemental Senior Indenture, dated as of November 6, 2009, between RGA and The Bank of New York Mellon Trust Company, N.A., as successor trustee to The Bank of New York, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on November 9, 2009 (File No. 1-11848)
4.5	Fourth Supplemental Senior Indenture, dated as of May 27, 2011, between RGA and The Bank of New York Mellon Trust Company, N.A., as successor trustee to The Bank of New York, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on May 31, 2011 (File No. 1-11848)
4.6	Indenture, dated as of August 21, 2012, between RGA and The Bank of New York Mellon Trust Company, N.A., as Trustee, incorporated by reference to Exhibit 4.1 to Current Report on Form 8-K filed on August 21, 2012 (File No. 1-11848)
4.7	First Supplemental Indenture, dated as of August 21, 2012, between RGA and The Bank of New York Mellon Trust Company, N.A., as Trustee, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on August 21, 2012 (File No. 1-11848)

- 4.8 Second Supplemental Indenture, dated as of September 24, 2013, between RGA and The Bank of New York Trust Company, N.A., as Trustee, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on September 24, 2013 (File No. 1-11848)
- 4.9 Third Supplemental Indenture, dated as of June 8, 2016, between RGA and The Bank of New York Mellon Trust Company, N.A., as Trustee, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on June 8, 2016 (File No. 1-11848)
- 4.10 Fourth Supplemental Indenture, dated as of June 8, 2016, between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee, incorporated by reference to Exhibit 4.3 to Current Report on Form 8-K filed on June 8, 2016 (File No. 1-11848)
- 4.11 Form of Junior Subordinated Indenture between RGA and The Bank of New York, as Trustee, incorporated by reference to Exhibit 4.3 of the Original S-3
- 4.12 Form of Second Supplemental Junior Subordinated Indenture between RGA and The Bank of New York, as Trustee, incorporated by reference to Exhibit 4.2 to Current Report on Form 8-K filed on December 9, 2005 (File No. 1-11848)
- 10.1 Standard Form of General American Automatic Agreement, incorporated by reference to Exhibit 10.11 to Amendment No. 1 to the Original S-1
- 10.2 Standard Form of General American Facultative Agreement, incorporated by reference to Exhibit 10.12 to Amendment No. 1 to the Original S-1
- 10.3 Standard Form of General American Automatic and Facultative YRT Agreement, incorporated by reference to Exhibit 10.13 to Amendment No. 1 to the Original S-1
- 10.4 Credit Agreement, dated as of September 25, 2014, among RGA, the lenders named therein, JPMorgan Chase Bank, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Bank of America, N.A., U.S. Bank National Association and Wells Fargo Bank, National Association as Joint Syndication Agents and Barclays Bank PLC, HSBC Bank USA, National Association, KeyBank National Association, Mizuho Bank, Ltd., Royal Bank of Canada, The Bank of Tokyo-Mitsubishi UFJ, Ltd. and UBS AG, Stamford Branch as Co-Documentation Agents, incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K filed on September 29, 2014 (File No. 1-11848)
- 10.5 RGA Annual Bonus Plan, effective May 21, 2008, as amended and restated, incorporated by reference to Exhibit 10.5 to Annual Report on Form 10-K for the fiscal year ended December 31, 2012 (file No. 1-11848), filed on March 1, 2013*
- 10.6 RGA Reinsurance Company Management Deferred Compensation Plan (ended January 1, 1995), incorporated by reference to Exhibit 10.18 to Amendment No. 1 to the Original S-1*
- 10.7 RGA Reinsurance Company Executive Deferred Compensation Plan (ended January 1, 1995), incorporated by reference to Exhibit 10.19 to Amendment No. 1 to the Original S-1*
- 10.8 RGA Reinsurance Company Executive Supplemental Retirement Plan (ended January 1, 1995), incorporated by reference to Exhibit 10.20 to Amendment No. 1 to the Original S-1*
- 10.9 RGA Reinsurance Company Augmented Benefit Plan (ended January 1, 1995), incorporated by reference to Exhibit 10.21 to Amendment No. 1 to the Original S-1*

10.10	RGA Flexible Stock Plan as amended and restated effective July 1, 1998 and as further amended by Amendment on March 16, 2000, Second Amendment on May 28, 2003, Third Amendment on May 26, 2004, Fourth Amendment on May 23, 2007, Fifth Amendment on May 21, 2008, Sixth Amendment on May 8, 2011, Seventh Amendment on May 18, 2011, and Eighth Amendment on May 15, 2013, incorporated by reference to Exhibit 10.1 to Quarterly Report on Form 10-Q for the period ended June 30, 2013 (File No. 1-11848), filed on August 5, 2013*
10.11	Form of RGA Flexible Stock Plan Non-Qualified Stock Option Agreement, incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K filed on September 10, 2004 (File No. 1-11848)*
10.12	Form of RGA Flexible Stock Plan Performance Contingent Share Agreement, incorporated by reference to Exhibit 10.2 to Quarterly Report on Form 10-Q for the period ended March 31, 2012 (File No. 1-11848), filed on May 7, 2012*
10.13	Form of Flexible Stock Plan Stock Appreciation Right Award Agreement, incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K filed on February 25, 2011 (File No. 1-11848)*
10.14	Form of Flexible Stock Plan Stock Appreciation Right Award Agreement, incorporated by reference to Exhibit 10.1 to Quarterly Report on Form 10-Q for the period ended March 31, 2012 (File No. 1-11848), filed on May 7, 2012*
10.15	RGA Flexible Stock Plan for Directors, as amended and restated effective May 28, 2003, incorporated by reference to Proxy Statement on Schedule 14A for the annual meeting of shareholders on May 28, 2003, filed on April 10, 2003*
10.16	RGA Phantom Stock Plan for Directors, as amended effective January 1, 2003, incorporated by reference to Proxy Statement on Schedule 14A for the annual meeting of shareholders on May 28, 2003, filed on April 10, 2003*
10.17	RGA Phantom Stock Plan for Directors, as amended and restated effective January 1, 2016, incorporated by reference to Exhibit 10.1 to Quarterly Report on Form 10-Q for the period ended September 30, 2015 (File No. 1-11848), filed on November 4, 2015*
10.18	Offer Letter, dated October 29, 2015, between RGA and Anna Manning, incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K filed on November 24, 2015 (File No. 1-11848)*
10.19	Form of Stock Appreciation Right Award Agreement, effective December 1, 2015, between RGA and Anna Manning, incorporated by reference to Exhibit 10.2 to Current Report on Form 8-K filed on November 24, 2015 (File No. 1-11848)*
10.20	Form of Stock Appreciation Right Award Agreement, effective December 1, 2015, between RGA and Alain Néemeh, incorporated by reference to Exhibit 10.3 to Current Report on Form 8-K filed on November 24, 2015 (File No. 1-11848)*
10.21	Form of Performance Contingent Share Agreement between RGA and A. Greig Woodring, effective March 4, 2016, incorporated by reference to Exhibit 10.1 of Current Report on Form 8-K filed on March 8, 2016 (File No. 1-11848)*
10.22	Letter Agreement, dated December 21, 2016, between RGA and A. Greig Woodring, incorporated by reference to Exhibit 10.2 of Current Report on Form 8-K filed on December 22, 2016 (File No. 1-11848)*
10.23	Directors' Compensation Summary Sheet*

10.24	Form of Directors' Indemnification Agreement, incorporated by reference to Exhibit 10.23 to Annual Report on Form 10-K for the fiscal year ended December 31, 2010 (File No. 1-11848), filed on February 28, 2011*
12.1	Ratio of Earnings to Fixed Charges
21.1	Subsidiaries of RGA
23.1	Consent of Deloitte & Touche LLP
24.1	Powers of Attorney for Messrs. Bartlett, Boot, Danahy, Eason, Henderson, Sievert and Tulin and Ms. Detrick, Guinn and Phillips
31.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to section 302 of the Sarbanes-Oxley Act of 2002
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document

* Represents a management contract or compensatory plan or arrangement required to be filed as an exhibit to this form pursuant to Item 15 of this Report.

Directors' Compensation Summary Sheet

	Board Members	Chairman of the Board
Annual Retainer	\$ 100,000	\$ 180,000
Committee Chairs		
Audit Committee	\$ 25,000	
Compensation Committee	\$ 15,000	
Nominating & Governance Committee	\$ 15,000	
FIRM Committee	\$ 15,000	
Deals Subgroup Committee Retainer	\$ 10,000	
Technology Subgroup Committee Retainer	\$ 10,000	
Stock Grants ⁽¹⁾	\$ 140,000	\$ 240,000

(1) Number of shares issued based upon FMV on date of grant.

Ratio of Earnings to Fixed Charges
(dollars in millions)

	Years Ended December 31,				
	2016	2015	2014	2013	2012
Income before income taxes	\$ 1,043.9	\$ 744.8	\$ 1,008.5	\$ 635.3	\$ 919.2
Less:					
Undistributed income (loss) of investees accounted for under the equity method	1.6	7.0	3.0	4.3	3.3
Adjusted earnings before fixed charges	1,042.3	737.8	1,005.5	631.0	915.9
Add fixed charges:					
Interest expense	163.5	165.5	108.1	134.8	117.5
Interest credited on reinsurance contracts	364.7	337.0	451.0	476.5	379.9
One-third of rentals	4.6	4.0	6.4	6.2	6.5
Total fixed charges	532.8	506.5	565.5	617.5	503.9
Total earnings plus fixed charges	\$ 1,575.1	\$ 1,244.3	\$ 1,571.0	\$ 1,248.5	\$ 1,419.8
Ratio of earnings to fixed charges	3.0	2.5	2.8	2.0	2.8
Total fixed charges	\$ 532.8	\$ 506.5	\$ 565.5	\$ 617.5	\$ 503.9
Less interest credited on reinsurance contracts	364.7	337.0	451.0	476.5	379.9
Total fixed charges excluding interest credited ⁽¹⁾	\$ 168.1	\$ 169.5	\$ 114.5	\$ 141.0	\$ 124.0
Total earnings plus fixed charges excluding interest credited under reinsurance contracts ⁽¹⁾	\$ 1,210.4	\$ 907.3	\$ 1,120.0	\$ 772.0	\$ 1,039.9
Ratio of earnings to fixed charges excluding interest credited under reinsurance contracts ⁽¹⁾	7.2	5.4	9.8	5.5	8.4

(1) This information is not required, but the Company believes it provides additional useful information on the coverage of fixed charges that are not related to its products.

**SUBSIDIARIES OF
REINSURANCE GROUP OF AMERICA, INCORPORATED**

Aurora National Life Assurance Company, California corporation, wholly owned by RGA Reinsurance Company

Bonhomme Financing LLC, Missouri limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

Bueller Financing, LLC, Missouri limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

Castlewood Financial LLC, Missouri limited liability company, wholly owned by Reinsurance Group of America, Incorporated

Castlewood Reinsurance Company, Missouri corporation, wholly owned by Reinsurance Company of Missouri, Incorporated

Chesterfield Financial Holdings LLC, Delaware limited liability company, wholly owned by Reinsurance Company of Missouri, Incorporated

Chesterfield Reinsurance Company, Missouri corporation, wholly owned by Chesterfield Financial Holdings LLC

Elite Sales Processing, Inc., Nebraska corporation, wholly owned by Reinsurance Group of America, Incorporated

Gateway Ridge LLC, Missouri limited liability company, wholly owned by Reinsurance Group of America, Incorporated

Horseshoe Financing LLC, Missouri limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

Leidsche Leven Holding B.V., Netherlands limited liability Company, wholly owned by RGA Americas Reinsurance Company, Ltd.

Leidsche Verzekering Maatschappij N.V., Netherlands corporation, wholly owned by Leidsche Leven Holding B.V.

Manor Reinsurance, Ltd., Barbados corporation, wholly owned by RGA Reinsurance Company (Barbados), Ltd.

Maroon Financing LLC, Missouri limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

Meramec Financing LLC, Iowa limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

My Life Covered LLC, Missouri limited liability company, wholly owned by RGAx LLC

Newcastle Financial LLC, Missouri limited liability company, wholly owned by Reinsurance Group of America, Incorporated

Parkway Reinsurance Company, Missouri corporation, wholly owned by Reinsurance Company of Missouri, Incorporated

Quincy Financing, LLC, Missouri limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

Reinsurance Company of Missouri, Incorporated, Missouri corporation, wholly owned by Reinsurance Group of America, Incorporated

Reinsurance Partners, Inc., Missouri corporation, wholly owned by RGA Reinsurance Company

RGA Americas Reinsurance Company, Ltd., Bermuda corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA Atlantic Reinsurance Company Ltd., Barbados corporation, wholly owned by RGA Americas Reinsurance Company, Ltd.

RGA Australian Holdings Pty Limited, Australian corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA Capital Limited, United Kingdom private limited company, wholly owned by RGA Holdings Limited

RGA Capital LLC, Missouri limited liability company, wholly owned by Reinsurance Group of America, Incorporated

RGA Enterprise Services Company, Missouri corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA Financial Group, L.L.C., Delaware limited liability company, 55% owned by RGA Reinsurance Company (Barbados) Ltd. and 45% owned by Reinsurance Group of America, Incorporated

RGA Global Reinsurance Company, Ltd., Bermuda private limited corporation, wholly owned by RGA Reinsurance Company (Barbados), Ltd.

RGA Global Reinsurance Company, Ltd.- Representative Office in Brazil, Ltd., Brazil limited liability company, 99% owned by RGA Global Reinsurance Company, Ltd. and 1% owned by RGA International Corporation

RGA Holdings Limited, United Kingdom private limited company, wholly owned by Reinsurance Group of America, Incorporated

RGA International Corporation, Nova Scotia ULC, wholly owned by Reinsurance Group of America, Incorporated

RGA International Division Sydney Office Pty. Limited, Australian limited liability company, wholly owned by RGA International Services Pty Ltd.

RGA International Reinsurance Company dac, Ireland private limited company, wholly owned by RGA Americas Reinsurance Company, Ltd.

RGA International Services Pty Ltd., Australian corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA Life Reinsurance Company of Canada, Federal corporation, wholly owned by RGA Americas Reinsurance Company, Ltd.

RGA Real Estate Holdings LLC, Missouri limited liability company, wholly owned by RGA Reinsurance Company

RGA Real Estate Investments LLC, Missouri limited liability company, wholly owned by RGA Reinsurance Company

RGA ReCap, LLC, Missouri corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA Reinsurance Company, Missouri corporation, wholly owned by Reinsurance Company of Missouri, Incorporated

RGA Reinsurance Company (Barbados) Ltd., Barbados corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA Reinsurance Company Middle East Limited, Dubai International Finance Centre private limited company, wholly owned by Reinsurance Group of America, Incorporated

RGA Reinsurance Company of Australia Limited, Australian corporation, wholly owned by RGA Australian Holdings Pty Limited

RGA Reinsurance Company of South Africa Limited, South African corporation, wholly owned by RGA South African Holdings (Pty) Ltd.

RGA Services (Singapore) Pte. Ltd., Singapore limited liability company, wholly owned by Reinsurance Group of America, Incorporated

RGA Services India Private Limited, Indian private limited corporation, 99% owned by Reinsurance Group of America, Incorporated and 1% owned by RGA Holdings Limited

RGA South African Holdings (Pty) Ltd., South African corporation, wholly owned by RGA Americas Reinsurance Company, Ltd.

RGA Technology Partners, Inc., Missouri corporation, wholly owned by Reinsurance Group of America, Incorporated

RGA UK Services Limited, United Kingdom private limited company, wholly owned by RGA Holdings Limited

RGA Ventures (Pty) Ltd., South African corporation, wholly owned by RGA South African Holdings (Pty), Ltd.

RGA Worldwide Reinsurance Company, Ltd., Barbados corporation, wholly owned by Reinsurance Group of America, Incorporated

RGAx LLC, Missouri limited liability company, wholly owned by Reinsurance Group of America, Incorporated

Rockwood Reinsurance Company, Missouri corporation, wholly owned by Reinsurance Group of America, Incorporated

Timberlake Financial, L.L.C., Delaware limited liability company, wholly owned by Reinsurance Company of Missouri, Incorporated

Timberlake Reinsurance Company II, South Carolina corporation, wholly owned by Timberlake Financial, L.L.C.

Ulysses Financing LLC, Missouri limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd.

Wild Horse Financing LLC, Iowa limited liability company, wholly owned by RGA Worldwide Reinsurance Company, Ltd

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-176104 on Form S-3 and Registration Statement Nos. 333-155685, 333-176106 and 333-192656 on Form S-8 of our reports dated February 28, 2017, relating to the consolidated financial statements and financial statement schedules of Reinsurance Group of America, Incorporated and the effectiveness of Reinsurance Group of America, Incorporated's internal control over financial reporting, appearing in this Annual Report on Form 10-K of Reinsurance Group of America, Incorporated for the year ended December 31, 2016.

/s/ DELOITTE & TOUCHE LLP

St. Louis, Missouri
February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ J. Cliff Eason Director

J. Cliff Eason
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ William J. Bartlett Director

William J. Bartlett
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Arnoud W.A. Boot Director

Arnoud W.A. Boot
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ John F. Danahy Director

John F. Danahy
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Christine R. Detrick Director

Christine R. Detrick
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Patricia L. Guinn Director

Patricia L. Guinn
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Alan C. Henderson Director

Alan C. Henderson
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Joyce A. Phillips Director

Joyce A. Phillips
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Frederick J. Sievert Director

Frederick J. Sievert
Name (Typed or printed)

Date February 28, 2017

REINSURANCE GROUP OF AMERICA, INCORPORATED

POWER OF ATTORNEY

I, the undersigned, as a director of Reinsurance Company of America, Incorporated hereby constitute Todd C. Larson and William L. Hutton, and each of them singly, with full power to sign for me, in my name and in the capacity checked below, the annual report of Reinsurance Group of America, Incorporated for fiscal year 2016 on Form 10-K and any and all amendments to this report with the Securities and Exchange Commission and I hereby ratify and confirm my signature as it may be signed by the above-mentioned people to said Form 10-K and to any and all amendments thereto.

Witness my hand on the date set forth below.

Signature

/s/ Stanley B. Tulin Director

Stanley B. Tulin
Name (Typed or printed)

Date February 28, 2017

I, Anna Manning, certify that:

1. I have reviewed this annual report on Form 10-K of Reinsurance Group of America, Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2017

/s/ Anna Manning

Anna Manning

President & Chief Executive Officer

I, Todd C. Larson, certify that:

1. I have reviewed this annual report on Form 10-K of Reinsurance Group of America, Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2017

/s/ Todd C. Larson

Todd C. Larson
Senior Executive Vice President
& Chief Financial Officer

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Reinsurance Group of America, Incorporated and subsidiaries, (the "Company"), for the year ended December 31, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Anna Manning, Chief Executive Officer of the Company, certifies, to her best knowledge and belief, pursuant to Securities Exchange Rule 13a-14(b) and 18 U.S.C. Section 1350, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2017

/s/ Anna Manning

Anna Manning

President & Chief Executive Officer

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Reinsurance Group of America, Incorporated and subsidiaries, (the "Company"), for the year ended December 31, 2016, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Todd C. Larson, Chief Financial Officer of the Company, certifies, to his best knowledge and belief, pursuant to Securities Exchange Rule 13a-14(b) and 18 U.S.C. Section 1350, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2017

/s/ Todd C. Larson

Todd C. Larson

Senior Executive Vice President &
Chief Financial Officer