



ARCH CAPITAL GROUP LTD.
2016 ANNUAL REPORT

Amounts in millions, except percentages and per share amounts

	<u>2016</u>	<u>2015</u>	<u>Change</u>
Book value per common share at year-end	\$ 55.19	\$ 47.64	15.8%
Net income available to common shareholders	\$ 664.7	\$ 515.8	28.9%
Per share	\$ 5.33	\$ 4.09	30.3%
Net income return on average common equity	10.9%	8.9%	
After-tax operating income*	\$ 577.4	\$ 565.2	2.2%
Per share	\$ 4.63	\$ 4.48	3.3%
Operating return on average common equity	9.4%	9.7%	
Combined ratio	88.2%	88.0%	
Gross premiums written	\$5,019.4	\$4,656.7	7.8%
Net premiums written	\$3,517.6	\$3,351.6	5.0%
Net investment income	\$ 277.2	\$ 271.7	2.0%
Per share	\$ 2.22	\$ 2.16	2.8%
Weighted average common shares and common share equivalents outstanding	124.7	126.0	(1.0)%

Table excludes amounts related to the “other” segment. All per share amounts are on a diluted basis.

To Our Shareholders:

Arch had a good year both financially and strategically in 2016. Financially, we achieved increases in net income, after-tax operating income and book value per share, key benchmarks of our performance. Strategically, we continued to diversify our business by expanding our presence in mortgage insurance through the acquisition of United Guaranty Corporation (UGC). The acquisition was completed at the end of 2016 and, as a result, UGC’s assets and liabilities are reflected in our balance sheet but their results are not reflected in our 2016 income statement and no income was earned relating to the transaction for the year. The acquisition is expected to be accretive to earnings beginning in 2017.

During the year, in our property casualty insurance and reinsurance business, we faced the dual headwinds of low investment yields available in the fixed income market and price weakness in many underwriting areas. We continued to deploy our capital judiciously, focusing on those areas of the property casualty market offering the best risk-adjusted returns.

At the same time, we continued to grow in mortgage insurance, where we find market conditions to be favorable. Mortgage insurance is an important third leg of the Company’s strategy, complementing our strong positions in specialty insurance and reinsurance. The acquisition of UGC expands the scale of our existing mortgage insurance businesses by combining UGC’s position as the market leader in the U.S. private mortgage insurance industry with Arch’s financial strength and history of innovation as well as with Arch MI’s distribution strength in the credit union channel. The combination of Arch MI and UGC creates a culture of leadership that we believe will benefit our shareholders and customers for years to come.

*After-tax operating income, which is a non-GAAP measure of financial performance, is defined as net income available to common shareholders, excluding net realized gains or losses, net impairment losses included in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses and UGC transaction costs and other, net of income taxes. The reconciliation of net income available to common shareholders to after-tax operating income can be found in the Company’s Annual Report on Form 10-K, filed with the SEC on March 1, 2017, under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” A copy of the Form 10-K is available on the Company’s web site and accompanies this letter.

Strategic Principles, Book Value Per Share and Return on Equity

Arch has evolved in the more than 15 years since its founding into a leading diversified specialty insurer and reinsurer, with a global footprint. Our expansion in the mortgage business is a further step in this evolution and reinforces our major strategic principles: *Underwriting discipline*—be highly disciplined in selecting risks and pricing them appropriately in all three of our segments through the cycle; *Cycle management*—deploy capital and people to those markets and product lines offering the best relative returns at any given time; and *Diversification*—selectively pursue diverse markets where we can apply our knowledge and expertise. We are bold and opportunistic at the right time in areas we know well, and are willing to be patient if the environment is not as attractive.

We have generated excellent returns for shareholders over time through the application of these principles. We assess the Company's performance by several criteria, including growth in book value per share, a major factor in the creation of shareholder value. We had another strong year in this regard, with book value per share advancing 15.8% in 2016 to \$55.19 at year-end, the eighth consecutive annual increase. Book value per share has now grown at an average annual rate of 16.2% since the Company's recapitalization. Shareholders who invested in our recapitalization and continue to hold the shares have seen the book value of their shares increase by approximately 806%.

A key driver of book value growth is return on equity (ROE). Net income ROE increased to 10.9% in 2016 from 8.9% in 2015 and has averaged 14.6% per year for the past decade. Operating ROE (which excludes non-operating items such as net realized investment gains and losses and foreign exchange gains and losses) was 9.4% in 2016, down from 9.7% in 2015, due to a higher level of average equity than in 2015 and the impact of price softness in the insurance and reinsurance markets. Operating income ROE has averaged 12.8% over the past decade.

Our reported ROE does not yet reflect the full extent of the profitability of the mortgage business we have written to date as the application of U.S. generally accepted accounting principles (GAAP) requires us to record revenues and profits for mortgage insurance policies over the period of coverage. We believe that the mortgage business written in 2016 will exceed our 15% ROE target as the embedded value of that business is recognized over time in our financial statements.

All financial results in this letter are presented on a "core" basis, which excludes amounts related to the "other" segment—*i.e.*, Watford Re, in which the Company owns an approximately 11% equity interest. However, in accordance with GAAP, 100% of the results of Watford are included in our consolidated financial statements; the results for the "other" segment can be found on pages 139 to 141 of our 10-K for 2016. We believe core results offer a more meaningful way for investors, analysts, rating agencies and others to evaluate the Company's performance.

Net Income, Operating Income, Underwriting Results and Cash Flow

Net income and operating income both were satisfactory in 2016. Net income available to common shareholders was \$664.7 million, or \$5.33 per share, increasing 30.3% over 2015 on a per-share basis. Net income for 2016 benefited from net realized gains on investments, while results for 2015 were diminished by net realized losses on investments. Net income reflects the full performance of the Company but tends to be volatile because of the inclusion of investment gains and losses and the effects of foreign exchange. Trends in net income are best viewed over a period of several years. After-tax operating income—which excludes net realized gains and losses on investments, foreign exchange gains and losses and other items—was \$577.4 million, or \$4.63 per share, up 3.3% on a per-share basis. We believe operating income offers a useful way to compare the Company's results year over year.

Both major components of operating income—underwriting income and investment income—registered growth in 2016. Pre-tax underwriting income advanced 6.0% to \$459.3 million reflecting a higher contribution from our mortgage group. These results stacked up well against those of other property casualty insurers as gauged by our combined ratio, a measure of underwriting profitability; a lower combined ratio signifies higher underwriting margins. Our GAAP

combined ratio was 88.2% in 2016, compared to 88.0% in 2015. By comparison, the combined ratio for the overall property casualty industry was 100.3% in 2016, indicating an underwriting loss for the industry, and 98.3% in 2015, according to A.M. Best Company. Industry losses from catastrophic events increased in 2016 following three years of relatively low cat losses. We have systematically reduced our writing of property cat business since 2012 in response to a weakening risk-adjusted premium level. Property catastrophe premiums accounted for just 7.2% of our reinsurance group's net premiums written in 2016, down from a peak of 25.9% in 2011. Consequently, although we were not immune to the rise in catastrophe events in 2016, we were less exposed than many other companies. Our losses from 2016 catastrophe events were \$85.3 million, compared to \$55.2 million for 2015 catastrophe events.

Our combined ratio consisted of a loss ratio of 54.6% in 2016, up from 53.2% in 2015, and an underwriting expense ratio of 33.6% in 2016, down from 34.8% in 2015. Net favorable reserve development was \$261.6 million in 2016 and \$272.3 million in 2015, as earlier-year reserves proved more than adequate. We have reported net favorable reserve development for 14 consecutive years, reflecting our prudent reserving policies as well as better-than-expected claims trends. There is no guarantee, however, that favorable reserve development will continue in the future.

Cash flow from operations was \$1.11 billion in 2016, up 57.4% from 2015. Several factors contributed to the increase, including growth in premiums collected, lower paid losses and the timing of premiums paid to reinsurers.

Investment Results

We invest to maintain a high quality, liquid portfolio with the goal of preserving capital and maximizing total return. Total investable assets held by the Company were \$18.6 billion at the end of 2016, up 27% from the end of 2015 due largely to the addition of the UGC portfolio at year-end. We are aligning the newly acquired UGC assets with our investment approach focusing on preservation of capital and total return. At year-end 2016, approximately 82% of the combined portfolio was invested in fixed maturity and short-term securities with an average credit quality of "AA-/Aa3." We have allocated a portion of the portfolio to equities and alternative investments which provide diversification and offer the potential for higher returns. Such investments accounted for approximately 14% of the portfolio at the end of 2016 and included positions in developed and emerging market equities, private credit, real estate, non-performing loans, infrastructure and distressed debt.

Our portfolio generated \$277.2 million of net investment income, or \$2.22 per share, in 2016, increasing 2.8% from 2015 on a per-share basis. As we added the UGC portfolio on December 31, 2016, net investment income did not reflect any income contribution for 2016. The pre-tax investment income yield of the Arch portfolio was 1.92% for 2016 and 2.06% for 2015. Yields available in the fixed income market have remained at historically low levels for eight years, impacting our investment income.

We emphasize a total return approach in our investment strategy because it reflects our focus on increasing book value per share. Total return (consisting of net investment income, net realized gains and losses, changes in unrealized gains and losses, and equity in the net income or losses of investment funds accounted for using the equity method), excluding the effects of foreign exchange, was 2.35% in 2016 and 1.62% in 2015. Including the effects of foreign exchange, total return was 2.07% in 2016 and 0.41% in 2015.

As discussed in prior letters, we divide the portfolio for investment purposes into three main categories: investments generated by our insurance, reinsurance and mortgage operations, investments supported by our debt and hybrid securities, and investments supported by common shareholders' equity. For our insurance, reinsurance and mortgage liabilities, we generally attempt to match, within a reasonable range, the duration of our investments to the duration of the underlying claim obligations. For our debt and hybrid securities and common shareholders' equity, we vary the duration of the portfolio based on our view of potential returns and the outlook for investments and the economy in general. The average effective duration of the overall portfolio (including the assets acquired from UGC) was 3.64 years at the end of 2016 and 3.43 years at the end of 2015.

Market Segments

Arch writes property casualty insurance and reinsurance for commercial accounts from operations in Bermuda, the United States, Canada, Europe, Australia and South Africa. In addition, we write mortgage insurance and reinsurance in the United States, Australia and Europe. Companywide, net premiums written were \$3.52 billion in 2016, increasing 5.0% over 2015.

We pride ourselves on our nimbleness and the professional skills of our people. Even as we have grown larger, with gross premiums written exceeding \$5 billion for the first time in 2016, we have maintained that nimbleness through a corporate structure of decentralized underwriting within the business units, subject to our extensive underwriting and pricing reviews and overall enterprise risk management framework. Throughout our businesses, we continue to look for opportunities, including those created by market dislocations, where we can utilize our capital to serve our clients and achieve satisfactory returns.

Insurance: In terms of revenues, property casualty insurance is our largest sector, with \$2.07 billion of net premiums written in 2016, a 1.3% increase from 2015. Pricing and terms and conditions for some of the more commoditized insurance lines, such as excess property and excess liability, came under increasing pressure in 2016. This was especially true for large commercial and institutional accounts. We continued, as we have for several years, to write more primary coverage and less excess coverage and to focus on specialty lines and smaller accounts where we believe risk-adjusted returns are more attractive.

During the year, we continued to allocate more capital to travel, accident and health, contract binding and other business lines with less volatility. We reduced our exposure to property, energy, marine and aviation and program business. Geographically, North America remained our largest market as growth in Australian exposures were partially offset by reductions in Europe, where pricing was relatively weaker.

Reinsurance: Net premiums written by our reinsurance business were \$1.05 billion in 2016, up 1.5% from 2015. Property catastrophe coverage has traditionally been a major product line for Arch, representing as much as one quarter of our reinsurance business in 2011. Although we have reduced our writings in this line in recent years, we expect to write more cat business if and when pricing returns to satisfactory levels. During 2016, in the face of reinsurance industry overcapacity and lower underwriting margins for many lines, we further reduced our participation in large multiline treaties and focused on niche reinsurance portfolios where we have a greater say in how the business is structured and priced. We also emphasized specialty markets such as life reinsurance and facultative reinsurance and other pockets of opportunity.

In the absence of more opportunities that meet our return expectations, we have used our underwriting skills to develop fee-based business managing reinsurance resources for other companies. In 2016, we underwrote \$514 million of reinsurance business on behalf of Watford Re and managed approximately \$500 million of collateralized limit for third party capital investing in the catastrophe space.

Mortgage insurance and reinsurance: Net premiums written by our mortgage insurance and reinsurance business were \$391.5 million in 2016, advancing 46.3% over 2015 following a 30.6% increase in 2015 as we have steadily built this business. The business was profitable in 2016 with a combined ratio of 56.6%. These numbers do not include the results of UGC, acquired at the end of 2016.

We entered the global mortgage reinsurance market in 2010 because of the dislocations and opportunities we saw in the wake of the 2008 financial crisis. We added primary insurance in 2014 through the acquisition of the operations of CMG Mortgage Insurance Company and the operating platform of PMI Mortgage Insurance Co. The UGC transaction in 2016 will accelerate our trajectory of growth, and we are pleased with the progress made to date in integrating UGC

into our mortgage operations. Arch and UGC had similar cultures of innovation and risk-based pricing, and we are combining the best of both.

At year-end, our total mortgage insurance and reinsurance risk in force (including UGC) was \$64.4 billion, consisting of \$59.7 billion of U.S. primary mortgage insurance, \$2.5 billion of global reinsurance and \$2.2 billion of GSE (government-sponsored enterprise) credit risk sharing and other transactions. Arch has been among the leading participants in GSE risk sharing programs, as Fannie Mae and Freddie Mac have “de-risked” their portfolios and shifted more credit risk to private-sector mortgage insurers. We expect this de-risking to continue, creating opportunities for our mortgage business. UGC was also an innovator in transferring risk to the capital markets through the sale of insurance-linked securities. We inherited this important risk management skill in our acquisition of UGC.

Investments in New Business Ventures

Watford Re continued to grow in its third year, reporting \$514 million of net premiums written in 2016. We helped create Watford Re, an independent company in which we own approximately an 11% equity interest, and serve as its insurance portfolio manager. The arrangement allows us to leverage our underwriting skill, receive fee income and serve customers with a broader range of reinsurance products. Watford Re’s strategy is to combine a diversified reinsurance and insurance business with a disciplined investment strategy comprised primarily of non-investment grade credit assets. Watford expanded its product line in 2016 by acquiring a previously dormant insurance carrier with admitted licenses in all 50 states.

In early January 2017, we acquired an approximate 25% equity interest in newly-launched Premia Holdings Ltd., which has an initial capitalization of \$510 million, consisting of \$400 million in common equity and \$110 million in debt and will begin to insure, reinsure and acquire property casualty runoff portfolios. Premia’s strategy is to reinsure or acquire companies or reserve portfolios in the non-life property casualty insurance and reinsurance run-off market. We also provide quota share reinsurance capacity on business written by Premia’s operating subsidiaries.

Risk and Capital Management

Risk management is critical to our long-term success. It not only involves identifying those market areas and product lines offering the best risk-reward characteristics, but also entails carefully managing our overall exposures. We have brought this approach to the mortgage insurance business, including the methodologies used to identify and manage capital requirements. We use all available tools, including reinsurance and capital markets transactions, to help manage risk and ensure that we are not overexposed to any event or downturn in market conditions.

Maintaining a strong, liquid balance sheet is vital to the way we conduct our business. A conservative balance sheet with modest leverage helps the Company withstand challenging market conditions and provides the resources to take advantage of underwriting opportunities when they arise. The financial flexibility of the balance sheet served the Company well in 2016 as it allowed us to finance the acquisition of UGC using a variety of financial instruments and a minimum amount of common equivalent shares. The purchase price was \$3.26 billion, consisting of cash consideration of \$2.16 billion and convertible non-voting common equivalent preference shares of the Company with a fair value of \$1.10 billion. We financed the cash consideration with public offerings of senior notes and non-convertible preferred shares, drawdowns from a revolving credit agreement and cash from the Arch balance sheet. Total capital was \$10.49 billion at the end of 2016, up from \$7.06 billion a year earlier. Debt and hybrids increased to 28.7% of total capital at the end of 2016, following the acquisition, compared with 17.2% at the end of 2015. Going forward, we plan to reduce the level of financial leverage to be more consistent with Arch’s historical norms.

Generally, we prefer to deploy our capital in our underwriting business. As we do not currently have a significant amount of excess capital, we do not project any share repurchase for 2017 and our first priority will be to reduce leverage by paying down debt. However, in times when we do have sufficient excess capital, we remain committed to returning it to its rightful owners, the Company’s shareholders. One way we do this is through share repurchases. At the end of 2016, \$446.5 million was available for share repurchases under the Board of Directors’ authorization.

The Company maintained an “A+” or equivalent financial strength rating from three of the four major rating agencies. The one exception was Moody’s Investors Service, which downgraded our rating one notch from A1 to A2. In explaining its decision, Moody’s said, “We expect Arch Capital’s profitability to be positively impacted by its mortgage insurance operations over the near to medium term,” but it expressed concerns about the longer-term outlook for the mortgage insurance market. We believe the acquisition of UGC was decidedly positive and timely for Arch. As always, we search for and evaluate each business opportunity and invest in the best opportunities available to us at any given time.

Arch People

Skilled and motivated people are essential to the success of any financial organization. We work hard to attract, develop and retain highly talented individuals who fit well with our culture of performance, accountability, teamwork and ethical conduct. We have a deep bench and promote from within wherever possible.

During 2016, Matthew Shulman was promoted to President and Chief Executive Officer of Arch Insurance’s operations in Europe in July. Matt joined us in 2009 and served as Executive Vice President of Arch Insurance U.S. before assuming his new position. He succeeds James Weatherstone, who helped build Arch Insurance Europe over the past 12 years. We thank James for his many contributions to the Company.

Dennis Brand, Senior Executive Vice President and Chief Administrative Officer of Arch Insurance Group and Chairman, Worldwide Services of Arch Capital Services, assumed responsibility for global shared services throughout Arch as we centralize our services worldwide and continue to drive efficiencies. He joined Arch in 2004 as Senior Vice President and Chief Reinsurance Officer of our U.S. insurance operations.

Deanna Mulligan, CEO of The Guardian Life Insurance Company of America, resigned from our Board of Directors in February 2017. She made a significant contribution to the Board during her tenure, and we thank her for her service.

Summary

Arch is coming off a solid year of achievement in a challenging market environment. We increased our earnings and expanded our participation in mortgage insurance through the acquisition of UGC. In addition, we emphasized underwriting discipline and risk management to preserve capital and maintain the strength of our balance sheet. All in all, it was a satisfying year. As 2017 begins, new challenges and opportunities lie on the horizon. Our strategies of underwriting discipline, cycle management and diversification will continue to guide us as we navigate these challenges and opportunities.

In closing, we thank our customers, agents and brokers for their continued support. We could not exist without you. We thank our employees for their hard work and dedication and for their individual and team contributions. Your skills and efforts drive the Company’s success. Finally, we thank our shareholders for their support. We will continue to manage the Company with a focus on creating meaningful shareholder value.



Constantine “Dinos” Iordanou
Chairman and Chief Executive Officer



Marc Grandisson
President and Chief Operating Officer

March 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

- ☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
OR
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
- For the Fiscal Year Ended December 31, 2016** **Commission File No. 0-26456**



ARCH CAPITAL GROUP LTD.
(Exact name of registrant as specified in its charter)

Bermuda

(State or other jurisdiction of incorporation or organization)

Not applicable

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

Waterloo House, Ground Floor

100 Pitts Bay Road, Pembroke HM 08, Bermuda

(Address of principal executive offices)

(441) 278-9250

(Registrant's telephone number, including area code)

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

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Common Shares, \$0.0033 par value per share	NASDAQ Stock Market (Common Shares)
6.75% Non-Cumulative Preferred Shares, Series C, \$0.01 par value per share	New York Stock Exchange
5.25% Non-Cumulative Preferred Shares, Series E, \$0.01 par value per share	NASDAQ Stock Market

Securities registered pursuant to Section 12(g) of the Exchange 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 Exchange 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 Exchange Act 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 (§229.405 of this chapter) 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. Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates, computed by reference to the closing price as reported by the NASDAQ Stock Market as of the last business day of the Registrant's most recently completed second fiscal quarter, was approximately \$8.47 billion.

As of February 24, 2017, there were 122,957,974 of the registrant's common shares outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Part III and Part IV incorporate by reference our definitive proxy statement for the 2017 annual meeting of shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A before May 1, 2017.

ARCH CAPITAL GROUP LTD.
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Cautionary Note Regarding Forward-Looking Statements

The Private Securities Litigation Reform Act of 1995 (“PSLRA”) provides a “safe harbor” for forward-looking statements. This report or any other written or oral statements made by or on behalf of us may include forward-looking statements, which reflect our current views with respect to future events and financial performance. All statements other than statements of historical fact included in or incorporated by reference in this report are forward-looking statements. Forward-looking statements, for purposes of the PSLRA or otherwise, can generally be identified by the use of forward-looking terminology such as “may,” “will,” “expect,” “intend,” “estimate,” “anticipate,” “believe” or “continue” and similar statements of a future or forward-looking nature or their negative or variations or similar terminology.

Forward-looking statements involve our current assessment of risks and uncertainties. Actual events and results may differ materially from those expressed or implied in these statements. Important factors that could cause actual events or results to differ materially from those indicated in such statements are discussed below, elsewhere in this report and in our periodic reports filed with the Securities and Exchange Commission (“SEC”), and include:

- our ability to successfully implement our business strategy during “soft” as well as “hard” markets;
- acceptance of our business strategy, security and financial condition by rating agencies and regulators, as well as by brokers and our insureds and reinsureds;
- the integration of United Guaranty Corporation and any other businesses we have acquired or may acquire into our existing operations;
- our ability to maintain or improve our ratings, which may be affected by our ability to raise additional equity or debt financings, by ratings agencies’ existing or new policies and practices, as well as other factors described herein;
- general economic and market conditions (including inflation, interest rates, unemployment, housing prices, foreign currency exchange rates, prevailing credit terms and the depth and duration of a recession) and conditions specific to the reinsurance and insurance markets (including the length and magnitude of the current “soft” market) in which we operate;
- competition, including increased competition, on the basis of pricing, capacity (including alternative sources of capital), coverage terms, or other factors;
- developments in the world’s financial and capital markets and our access to such markets;
- our ability to successfully enhance, integrate and maintain operating procedures (including information technology) to effectively support our current and new business;
- the loss of key personnel;
- accuracy of those estimates and judgments utilized in the preparation of our financial statements, including those related to revenue recognition, insurance and other reserves, reinsurance recoverables, investment valuations, intangible assets, bad debts, income taxes, contingencies and litigation, and any determination to use the deposit method of accounting, which for a relatively new insurance and reinsurance company, like our company, are even more difficult to make than those made in a mature company since relatively limited historical information has been reported to us through December 31, 2016;
- greater than expected loss ratios on business written by us and adverse development on claim and/or claim expense liabilities related to business written by our insurance and reinsurance subsidiaries;
- severity and/or frequency of losses;
- claims for natural or man-made catastrophic events in our insurance or reinsurance business could cause large losses and substantial volatility in our results of operations;
- acts of terrorism, political unrest and other hostilities or other unforecasted and unpredictable events;
- availability to us of reinsurance to manage our gross and net exposures and the cost of such reinsurance;
- the failure of reinsurers, managing general agents, third party administrators or others to meet their obligations to us;
- the timing of loss payments being faster or the receipt of reinsurance recoverables being slower than anticipated by us;
- our investment performance, including legislative or regulatory developments that may adversely affect the fair value of our investments;

- changes in general economic conditions, including new or continued sovereign debt concerns in Eurozone countries or downgrades of U.S. securities by credit rating agencies, which could affect our business, financial condition and results of operations;
- the volatility of our shareholders' equity from foreign currency fluctuations, which could increase due to us not matching portions of our projected liabilities in foreign currencies with investments in the same currencies;
- losses relating to aviation business and business produced by a certain managing underwriting agency for which we may be liable to the purchaser of our prior reinsurance business or to others in connection with the May 5, 2000 asset sale described in our periodic reports filed with the SEC;
- changes in accounting principles or policies or in our application of such accounting principles or policies;
- changes in the political environment of certain countries in which we operate or underwrite business;
- statutory or regulatory developments, including as to tax policy and matters and insurance and other regulatory matters such as the adoption of proposed legislation that would affect Bermuda-headquartered companies and/or Bermuda-based insurers or reinsurers and/or changes in regulations or tax laws applicable to us, our subsidiaries, brokers or customers; and
- the other matters set forth under Item 1A "Risk Factors," Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and other sections of this Annual Report on Form 10-K, as well as the other factors set forth in Arch Capital Group Ltd.'s other documents on file with the SEC, and management's response to any of the aforementioned factors.

All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. The foregoing review of important factors should not be construed as exhaustive and should be read in conjunction with other cautionary statements that are included herein or elsewhere. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

PART I

ITEM 1. BUSINESS

As used in this report, references to “we,” “us,” “our,” “Arch” or the “Company” refer to the consolidated operations of Arch Capital Group Ltd. (“ACGL”) and its subsidiaries. Tabular amounts are in U.S. Dollars in thousands, except share amounts, unless otherwise noted. We refer you to Item 1A “Risk Factors” for a discussion of risk factors relating to our business.

OUR COMPANY

General

ACGL, a Bermuda public limited liability company with \$10.49 billion in capital at December 31, 2016, provides insurance, reinsurance and mortgage insurance on a worldwide basis through its wholly owned subsidiaries. While we are positioned to provide a full range of property, casualty and mortgage insurance and reinsurance lines, we focus on writing specialty lines of insurance and reinsurance. For 2016, we wrote \$4.03 billion of net premiums and reported net income available to Arch common shareholders of \$664.7 million. Book value per share was \$55.19 at December 31, 2016, compared to \$47.64 per share at December 31, 2015.

ACGL’s registered office is located at Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda (telephone number: (441) 295-1422), and its principal executive offices are located at Waterloo House, Ground Floor, 100 Pitts Bay Road, Pembroke HM 08, Bermuda (telephone number: (441) 278-9250). ACGL makes available free of charge through its website, located at www.archcapgroup.com, its annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The public may read and copy any materials ACGL files with the SEC at the SEC’s Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC (such as ACGL) and the address of that site is www.sec.gov.

Our History

Our current operations were built on an existing underwriting platform through an underwriting initiative in October 2001 to meet current and future demand in the global insurance and

reinsurance markets. Since that time, we have attracted a proven management team with extensive industry experience and enhanced our existing global underwriting platform for our insurance and reinsurance businesses. It is our belief that our underwriting platform, our experienced management team and our strong capital base that is unencumbered by significant pre-2002 risks have enabled us to establish a strong presence in the global insurance and reinsurance markets.

Prior to the 2001 underwriting initiative, our insurance underwriting platform consisted of Arch Insurance (Bermuda), a division of Arch Reinsurance Ltd. (“Arch Re Bermuda”), our Bermuda-based reinsurer and insurer, and our U.S.-licensed insurers, Arch Insurance Company (“Arch Insurance”), Arch Excess & Surplus Insurance Company (“Arch E&S”), Arch Specialty Insurance Company (“Arch Specialty”) and Arch Indemnity Insurance Company (“Arch Indemnity”). We established Arch Insurance Company (Europe) Limited (“Arch Insurance Company Europe”), our United Kingdom-based subsidiary, in 2004, and we expanded our North American presence when Arch Insurance opened a branch office in Canada in 2005. In January 2013, Arch Insurance Canada Ltd. (“Arch Insurance Canada”), a Canada domestic company, commenced operations and replaced the branch office. In 2009, we established a managing agent and syndicate 2012 (“Arch Syndicate 2012”) at Lloyd’s of London (“Lloyd’s”). See “Operations—Insurance Operations” for further details on our insurance operations.

Prior to the 2001 underwriting initiative, our reinsurance underwriting platform consisted of Arch Re Bermuda and Arch Reinsurance Company (“Arch Re U.S.”), our U.S.-licensed reinsurer. Our reinsurance operations in Europe began in November 2006 with the formation of a Swiss branch of Arch Re Bermuda, and the formation of a Danish underwriting agency in 2007. In addition to the U.S. reinsurance activities of Arch Re U.S., we launched our property facultative reinsurance underwriting operations in 2007, which underwrites in the U.S., Canada and Europe. We formed Arch Reinsurance Europe Designated Activity Company (formerly Arch Reinsurance Underwriting Europe Limited and referred to as “Arch Re Europe”), our Ireland-based reinsurance company, in 2008. In 2011, we launched treaty operations in Canada and in April 2012 we acquired the credit and surety reinsurance operations of Ariel Reinsurance Company Ltd. (“Ariel Re”). In May 2015, we obtained complete ownership and effective control of Gulf Reinsurance Limited, previously a joint venture. See “Operations—Reinsurance Operations” for further details on our reinsurance operations.

Our mortgage operations include U.S. and international mortgage insurance and reinsurance operations as well as government sponsored enterprise (“GSE”) credit risk sharing transactions. Our mortgage platform was built through the acquisition of CMG Mortgage Insurance Company on January 30, 2014 (subsequently renamed Arch Mortgage Insurance Company) and further expanded through the acquisition of United Guaranty Corporation, a North Carolina corporation (“UGC”), from American International Group, Inc. (“AIG”), which closed on December 31, 2016. As such, our balance sheet reflects the acquisition of UGC while our results of operations for 2016 do not include UGC activity other than the impact of capital raising activity and transaction costs. The aggregate purchase price paid by ACGL was \$3.26 billion, consisting of cash consideration of \$2.16 billion and convertible non-voting common equivalent preferred shares of ACGL with a fair value of \$1.1 billion.

Arch Mortgage Insurance Company and the primary underwriting operating mortgage insurance subsidiaries of UGC, United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company, are leading providers of mortgage insurance products and services to the U.S. market and are also approved as eligible mortgage insurers by Federal National Mortgage Association (“Fannie Mae”) and Federal Home Loan Mortgage Corporation (“Freddie Mac”), each a GSE. In addition, our mortgage operations include the results of Arch Mortgage Insurance Designated Activity Company (formerly Arch Mortgage Insurance Limited and referred to as “Arch MI Europe”), a leading provider of mortgage insurance products and services to the European market.

The mortgage operations also include GSE credit risk-sharing transactions and direct mortgage insurance to U.S. mortgage lenders with respect to mortgages that lenders intend to retain in portfolio or include in non-agency securitizations along with mortgage reinsurance for the U.S. and Australian markets. See “Operations—Mortgage Operations” for further details on our mortgage operations.

In March 2014, we acquired approximately 11% of Watford Holdings Ltd. Watford Holdings Ltd. is the parent of Watford Re Ltd., a multi-line Bermuda reinsurance company (together with Watford Holdings Ltd., “Watford Re”).

In January 2017, we acquired approximately 25% of Premia Holdings Ltd. Premia Holdings Ltd. is the parent of Premia Reinsurance Ltd., a newly-formed multi-line Bermuda reinsurance company (Premia Holdings Ltd. together with its subsidiary are referred to as “Premia Re”). See “Operations—Other Operations” for further details on Watford Re and Premia Re.

The growth of our underwriting platforms was supported through the net proceeds of: (1) an equity capital infusion of

\$763 million led by funds affiliated with Warburg Pincus LLC and Hellman & Friedman LLC in late 2001; (2) a public offering of 7.5 million of our common shares with net proceeds of \$179 million in April 2002; (3) the exercise of class A warrants by our principal shareholders and other investors in September 2002, which provided net proceeds of \$74 million; (4) a March 2004 public offering of 4.7 million of our common shares with net proceeds of \$179 million; (5) a May 2004 public offering of \$300 million principal amount of our 7.35% senior notes due May 2034; (6) a February 2006 public offering of \$200 million of our 8.00% series A non-cumulative preferred shares; (7) a May 2006 public offering of \$125 million of our 7.875% series B non-cumulative preferred shares; (8) an April 2012 public offering of \$325 million of our 6.75% series C non-cumulative preferred shares which was used to redeem all series A and series B preferred shares; (9) a December 2013 public offering of \$500 million principal amount of 5.144% senior notes due November 1, 2043 by Arch Capital Group (U.S.) Inc. (“Arch-U.S.”), a wholly owned subsidiary of ACGL, and fully and unconditionally guaranteed by ACGL; (10) a September 2016 public offering of \$450 million of our 5.25% series E non-cumulative preferred shares; and (11) a November 2016 public offering of (i) \$500 million principal amount of 4.011% senior notes due December 15, 2026 and (ii) \$450 million principal amount of 5.031% senior notes due December 15, 2046 by Arch Capital Finance LLC (“Arch Finance”), a wholly owned subsidiary of ACGL, and fully and unconditionally guaranteed by ACGL.

The board of directors of ACGL has authorized the investment in ACGL’s common shares through a share repurchase program. Repurchases under the share repurchase program may be effected from time to time in open market or privately negotiated transactions through December 31, 2019. Since the inception of the share repurchase program in February 2007 through December 31, 2016, ACGL has repurchased 125.2 million common shares for an aggregate purchase price of \$3.68 billion. At December 31, 2016, the total remaining authorization under the share repurchase program was \$446.5 million.

OPERATIONS

We classify our businesses into three underwriting segments — insurance, reinsurance and mortgage — and two other operating segments — ‘other’ and corporate (non-underwriting). For an analysis of our underwriting results by segment, see note 5, “Segment Information,” of the notes accompanying our consolidated financial statements and “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations.”

Insurance Operations

Our insurance operations are conducted in Bermuda, the United States, Europe, Canada, Australia and South Africa. Our insurance operations in Bermuda are conducted through Arch Insurance (Bermuda), a division of Arch Re Bermuda, and Alternative Re Limited.

In the U.S., our insurance group's principal insurance subsidiaries are Arch Insurance, Arch Specialty, Arch Indemnity and Arch E&S. Arch Insurance is an admitted insurer in 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands and Guam. Arch Specialty is an approved excess and surplus lines insurer in 49 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands and an authorized insurer in one state. Arch Indemnity is an admitted insurer in 49 states and the District of Columbia. Arch E&S, which is not currently writing business, is an approved excess and surplus lines insurer in 47 states and the District of Columbia and an authorized insurer in one state. The headquarters for our insurance group's U.S. support operations (excluding underwriting units) is in Jersey City, New Jersey. The insurance group has offices throughout the U.S., including four regional offices located in Alpharetta, Georgia, Chicago, Illinois, New York, New York and San Francisco, California and additional branch offices.

Our insurance operations in Canada are conducted through Arch Insurance Canada, a Canada domestic company which is authorized in all Canadian provinces and territories. Arch Insurance Canada is headquartered in Toronto, Ontario. Our insurance operations in Europe are conducted on two platforms, Arch Insurance Company Europe and Arch Syndicate 2012 (the U.K. insurance operations are collectively referred to as "Arch Insurance Europe"). Arch Insurance Europe conducts its operations from London, England. Arch Insurance Company Europe is approved as an excess and surplus lines insurer in 27 states and the District of Columbia and also has branches in Germany, Italy, Spain and Denmark. Arch Underwriting at Lloyd's Ltd ("AUAL") is the managing agent of Arch Syndicate 2012 and is responsible for the daily management of Arch Syndicate 2012. Arch Syndicate 2012 has enhanced our underwriting platform by providing us with access to Lloyd's extensive distribution network and worldwide licenses. Arch Underwriting at Lloyd's (Australia) Pty Ltd, based in Sydney, Australia, and Arch Underwriting Managers at Lloyd's (South Africa) (Pty) Limited, based in Johannesburg, South Africa, are Lloyd's services companies which underwrite exclusively for Arch Syndicate 2012. Arch Underwriting Agency (Australia) Pty. Ltd. is an Australian agency which also underwrites for Arch Syndicate 2012 and third parties.

As of February 20, 2017, our insurance group had approximately 1,620 employees.

Strategy. Our insurance group's strategy is to operate in lines of business in which underwriting expertise can make a meaningful difference in operating results. The insurance group focuses on talent-intensive rather than labor-intensive business and seeks to operate profitably (on both a gross and net basis) across all of its product lines. To achieve these objectives, our insurance group's operating principles are to:

- *Capitalize on profitable underwriting opportunities.* Our insurance group believes that its experienced management and underwriting teams are positioned to locate and identify business with attractive risk/reward characteristics. As profitable underwriting opportunities are identified, our insurance group will continue to seek to make additions to its product portfolio in order to take advantage of market trends. This includes adding underwriting and other professionals with specific expertise in specialty lines of insurance.
- *Centralize responsibility for underwriting.* Our insurance group consists of a range of product lines. The underwriting executive in charge of each product line oversees all aspects of the underwriting product development process within such product line. Our insurance group believes that centralizing the control of such product line with the respective underwriting executive allows for close management of underwriting and creates clear accountability for results. Our U.S. insurance group has four regional offices, and the executive in charge of each region is primarily responsible for all aspects of the marketing and distribution of our insurance group's products, including the management of broker and other producer relationships in such executive's respective region. In our non-U.S. offices, a similar philosophy is observed, with responsibility for the management of each product line residing with the senior underwriting executive in charge of such product line.
- *Maintain a disciplined underwriting philosophy.* Our insurance group's underwriting philosophy is to generate an underwriting profit through prudent risk selection and proper pricing. Our insurance group believes that the key to this approach is adherence to uniform underwriting standards across all types of business. Our insurance group's senior management closely monitors the underwriting process.
- *Focus on providing superior claims management.* Our insurance group believes that claims handling is an integral component of credibility in the market for insurance products. Therefore, our insurance group believes that its ability to handle claims expeditiously and satisfactorily is a key to its success. Our insurance group employs experienced claims professionals and also utilizes experienced external claims managers (third party administrators) where appropriate.

- *Utilize a brokerage distribution system.* Our insurance group believes that by utilizing a brokerage distribution system, consisting of select international, national and regional brokers, both wholesale and retail, it can efficiently access a broad customer base while maintaining underwriting control and discipline.
- *Grow strategic partnerships in stable and niche areas.* Our insurance group aims to build more integrated long-term alignment with strategic partners offering superior access to niche opportunities, quality scalable businesses, or lines with reliable defensive qualities.

Our insurance group writes business on both an admitted and non-admitted basis. Our insurance group focuses on the following areas:

- *Construction and national accounts:* primary and excess casualty coverages to middle and large accounts in the construction industry and a wide range of products for middle and large national accounts, specializing in loss sensitive primary casualty insurance programs (including large deductible, self-insured retention and retrospectively rated programs).
- *Excess and surplus casualty:* primary and excess casualty insurance coverages, including middle market energy business, and contract binding, which primarily provides casualty coverage through a network of appointed agents to small and medium risks.
- *Lenders products:* collateral protection, debt cancellation and service contract reimbursement products to banks, credit unions, automotive dealerships and original equipment manufacturers and other specialty programs that pertain to automotive lending and leasing.
- *Professional lines:* directors' and officers' liability, errors and omissions liability, employment practices liability, fiduciary liability, crime, professional indemnity and other financial related coverages for corporate, private equity, venture capital, real estate investment trust, limited partnership, financial institution and not-for-profit clients of all sizes and medical professional and general liability insurance coverages for the healthcare industry. The business is predominately written on a claims-made basis.
- *Programs:* primarily package policies, underwriting workers' compensation and umbrella liability business in support of desirable package programs, targeting program managers with unique expertise and niche products offering general liability, commercial automobile, inland marine and property business with minimal catastrophe exposure.
- *Property, energy, marine and aviation:* primary and excess general property insurance coverages, including catastrophe-exposed property coverage, for commercial

clients. Coverages for marine include hull, war, specie and liability. Aviation and stand-alone terrorism are also offered.

- *Travel, accident and health:* specialty travel and accident and related insurance products for individual, group travelers, travel agents and suppliers, as well as accident and health, which provides accident, disability and medical plan insurance coverages for employer groups, medical plan members, students and other participant groups.
- *Other:* includes alternative market risks (including captive insurance programs), excess workers' compensation and employer's liability insurance coverages for qualified self-insured groups, associations and trusts, and contract and commercial surety coverages, including contract bonds (payment and performance bonds) primarily for medium and large contractors and commercial surety bonds for Fortune 1000 companies and smaller transaction business programs.

Underwriting Philosophy. Our insurance group's underwriting philosophy is to generate an underwriting profit (on both a gross and net basis) through prudent risk selection and proper pricing across all types of business. One key to this philosophy is the adherence to uniform underwriting standards across each product line that focuses on the following:

- risk selection;
- desired attachment point;
- limits and retention management;
- due diligence, including financial condition, claims history, management, and product, class and territorial exposure;
- underwriting authority and appropriate approvals; and
- collaborative decision making.

Premiums Written and Geographic Distribution. Set forth below is summary information regarding net premiums written for our insurance group:

	Year Ended December 31,					
	2016		2015		2014	
	Amount	%	Amount	%	Amount	%
Professional lines	\$ 440,149	21	\$ 434,024	21	\$ 476,604	22
Programs	330,322	16	423,157	21	480,580	22
Construction and national accounts	328,997	16	299,463	15	286,994	13
Travel, accident and health	224,380	11	160,132	8	145,732	7
Excess and surplus casualty	214,863	10	204,856	10	212,519	10
Property, energy, marine and aviation	175,376	9	203,186	10	244,640	11
Lenders products	105,650	5	106,916	5	100,407	5
Other	252,544	12	213,937	11	199,178	9
Total	\$2,072,281	100	\$2,045,671	100	\$2,146,654	100
By client location						
United States	\$1,718,415	83	\$1,710,918	84	\$1,726,181	80
Europe	173,423	8	187,020	9	240,136	11
Asia and Pacific	93,752	5	64,638	3	79,564	4
Other	86,691	4	83,095	4	100,773	5
Total	\$2,072,281	100	\$2,045,671	100	\$2,146,654	100
By underwriting location						
United States	\$1,690,208	82	\$1,673,867	82	\$1,688,887	79
Europe	327,034	16	317,998	16	394,430	18
Other	55,039	3	53,806	3	63,337	3
Total	\$2,072,281	100	\$2,045,671	100	\$2,146,654	100

Marketing. Our insurance group's products are marketed principally through a group of licensed independent retail and wholesale brokers. Clients (insureds) are referred to our insurance group through a large number of international, national and regional brokers and captive managers who receive from the insured or insurer a set fee or brokerage commission usually equal to a percentage of gross premiums. In the past, our insurance group also entered into contingent commission arrangements with some brokers that provided for the payment of additional commissions based on volume or profitability of business. Currently, some of our contracts with brokers provide for additional commissions based on volume. We have also entered into service agreements with select international brokers that provide access to their proprietary industry analytics. In general, our insurance group has no implied or explicit commitments to accept business from any particular broker and neither brokers nor any other third parties have the authority to bind our insurance group, except in the case where

underwriting authority may be delegated contractually to select program administrators. Such administrators are subject to a due diligence financial and operational review prior to any such delegation of authority and ongoing reviews and audits are carried out as deemed necessary by our insurance group to assure the continuing integrity of underwriting and related business operations. See "Risk Factors—Risks Relating to Our Company—We could be materially adversely affected to the extent that managing general agents, general agents and other producers exceed their underwriting authorities or if our agents, our insureds or other third parties commit fraud or otherwise breach obligations owed to us." For information on major brokers, see note 16, "Commitments and Contingencies—Concentrations of Credit Risk," of the notes accompanying our consolidated financial statements.

Risk Management and Reinsurance. In the normal course of business, our insurance group may cede a portion of its premium on a quota share or excess of loss basis through treaty or facultative reinsurance agreements. Reinsurance arrangements do not relieve our insurance group from its primary obligations to insureds. Reinsurance recoverables are recorded as assets, predicated on the reinsurers' ability to meet their obligations under the reinsurance agreements. If the reinsurers are unable to satisfy their obligations under the agreements, our insurance subsidiaries would be liable for such defaulted amounts. Our principal insurance subsidiaries, with oversight by a group-wide reinsurance steering committee ("RSC"), are selective with regard to reinsurers, seeking to place reinsurance with only those reinsurers which meet and maintain specific standards of established criteria for financial strength. The RSC evaluates the financial viability of its reinsurers through financial analysis, research and review of rating agencies' reports and also monitors reinsurance recoverables and collateral with unauthorized reinsurers. The financial analysis includes ongoing qualitative and quantitative assessments of reinsurers, including a review of the financial stability, appropriate licensing, reputation, claims paying ability and underwriting philosophy of each reinsurer. Our insurance group will continue to evaluate its reinsurance requirements. See note 8, "Reinsurance," of the notes accompanying our consolidated financial statements.

For catastrophe-exposed insurance business, our insurance group seeks to limit the amount of exposure to catastrophic losses it assumes through a combination of managing aggregate limits, underwriting guidelines and reinsurance. For a discussion of our risk management policies, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Ceded Reinsurance" and "Risk Factors—Risks Relating to Our Industry—The failure of any of the loss limitation methods we employ could have a material adverse effect on our financial condition or results of operations."

Claims Management. Our insurance group's claims management function is performed by claims professionals, as well as experienced external claims managers (third party administrators), where appropriate. In addition to investigating, evaluating and resolving claims, members of our insurance group's claims departments work with underwriting professionals as functional teams in order to develop products and services desired by the group's clients.

Reinsurance Operations

Our reinsurance operations are conducted on a worldwide basis through our reinsurance subsidiaries, Arch Re Bermuda, Arch Re U.S. and Arch Re Europe. Arch Re Bermuda is a registered Class 4 insurer and long-term insurer and is headquartered in Hamilton, Bermuda. Arch Re U.S. is licensed or is an accredited or otherwise approved reinsurer in 50 states and the District of Columbia, the provinces of Ontario and Quebec in Canada with its principal U.S. offices in Morristown, New Jersey. Arch Re U.S. is also an admitted insurer in Guam. Our property facultative reinsurance operations are conducted primarily through Arch Re U.S. with certain executive functions conducted through Arch Re Facultative Underwriters Inc. located in Farmington, Connecticut. The property facultative reinsurance operations have offices throughout the U.S., Canada and in Europe. Arch Re Europe, licensed and authorized as a non-life reinsurer and a life reinsurer, is headquartered in Dublin, Ireland with branch offices in Zurich and London.

In May 2008, we provided \$100.0 million of funding to Gulf Reinsurance Limited, a wholly owned subsidiary of Gulf Re Holdings Limited (collectively, "Gulf Re"), pursuant to the joint venture agreement with Gulf Investment Corporation GSC ("GIC"). Under the agreement, Arch Re Bermuda and GIC each owned 50% of Gulf Re. Gulf Re provides property and casualty reinsurance primarily in the member states of the Gulf Cooperation Council, which include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. We entered into a number of strategic initiatives related to Gulf Re in the 2014 fourth quarter, including an agreement to acquire complete ownership and effective control of Gulf Re. Such agreement was approved by the Dubai Financial Services Authority in April 2015 and the transaction closed in May 2015. GIC will continue to participate equally with us in the financial results of Gulf Re and have the ability to purchase shares in Gulf Re until 2022. We expect new and renewal business formerly written by Gulf Re to be written by Arch Re Bermuda upon referral to Arch Re Bermuda from our new intermediary, Arch Underwriters (Gulf) Limited ("Arch Underwriters Gulf"), which recently obtained authorization from the Dubai Financial Services Authority.

In October 2008, Arch Re Europe was licensed and authorized as a non-life reinsurer and as a life reinsurer in November 2009. In April 2012, we acquired the credit and surety reinsurance operations of Ariel Re based in Zurich, Switzerland. Treaty

operations in Canada commenced in 2011 and, beginning in 2015, the business is written through the Canadian branch of Arch Re U.S. ("Arch Re Canada").

As of February 20, 2017, our reinsurance group had approximately 280 employees.

Strategy. Our reinsurance group's strategy is to capitalize on our financial capacity, experienced management and operational flexibility to offer multiple products through our operations. The reinsurance group's operating principles are to:

- *Actively select and manage risks.* Our reinsurance group only underwrites business that meets certain profitability criteria, and it emphasizes disciplined underwriting over premium growth. To this end, our reinsurance group maintains centralized control over reinsurance underwriting guidelines and authorities.
- *Maintain flexibility and respond to changing market conditions.* Our reinsurance group's organizational structure and philosophy allows it to take advantage of increases or changes in demand or favorable pricing trends. Our reinsurance group believes that its existing platforms in Bermuda, the U.S., Europe, Dubai and Canada, broad underwriting expertise and substantial capital facilitate adjustments to its mix of business geographically and by line and type of coverage. Our reinsurance group believes that this flexibility allows it to participate in those market opportunities that provide the greatest potential for underwriting profitability.
- *Maintain a low cost structure.* Our reinsurance group believes that maintaining tight control over its staffing level and operating primarily as a broker market reinsurer permits it to maintain low operating costs relative to its capital and premiums.

Our reinsurance group writes business on both a proportional and non-proportional basis and writes both treaty and facultative business. In a proportional reinsurance arrangement (also known as pro rata reinsurance, quota share reinsurance or participating reinsurance), the reinsurer shares a proportional part of the original premiums and losses of the reinsured. The reinsurer pays the cedent a commission which is generally based on the cedent's cost of acquiring the business being reinsured (including commissions, premium taxes, assessments and miscellaneous administrative expenses) and may also include a profit factor. Non-proportional (or excess of loss) reinsurance indemnifies the reinsured against all or a specified portion of losses on underlying insurance policies in excess of a specified amount, which is called a "retention." Non-proportional business is written in layers and a reinsurer or group of reinsurers accepts a band of coverage up to a specified amount. The total coverage purchased by the cedent is referred to as a "program." Any liability exceeding the upper limit of the program reverts to the cedent.

The reinsurance group's treaty operations generally seek to write significant lines on less commoditized classes of coverage, such as specialty property and casualty reinsurance treaties. However, with respect to other classes of coverage, such as property catastrophe and casualty clash, the reinsurance group's treaty operations participate in a relatively large number of treaties where they believe that they can underwrite and process the business efficiently. The reinsurance group's property facultative operations write reinsurance on a facultative basis whereby they assume part of the risk under primarily single insurance contracts. Facultative reinsurance is typically purchased by ceding companies for individual risks not covered by their reinsurance treaties, for unusual risks or for amounts in excess of the limits on their reinsurance treaties.

Our reinsurance group focuses on the following areas:

- *Casualty*: provides coverage to ceding company clients on third party liability and workers' compensation exposures from ceding company clients, primarily on a treaty basis. Exposures include, among others, executive assurance, professional liability, workers' compensation, excess and umbrella liability, excess motor and healthcare business.
- *Marine and aviation*: provides coverage for energy, hull, cargo, specie, liability and transit, and aviation business, including airline and general aviation risks. Business written may also include space business, which includes coverages for satellite assembly, launch and operation for commercial space programs.
- *Other specialty*: provides coverage to ceding company clients for proportional motor and other lines, including surety, accident and health, workers' compensation catastrophe, agriculture, trade credit and political risk.
- *Property catastrophe*: provides protection for most catastrophic losses that are covered in the underlying policies written by reinsureds, including hurricane, earthquake, flood, tornado, hail and fire, and coverage for other perils on a case-by-case basis. Property catastrophe reinsurance provides coverage on an excess of loss basis when aggregate losses and loss adjustment expense from a single occurrence or aggregation of losses from a covered peril exceed the retention specified in the contract.
- *Property excluding property catastrophe*: provides coverage for both personal lines and commercial property exposures and principally covers buildings, structures, equipment and contents. The primary perils in this business include fire, explosion, collapse, riot, vandalism, wind, tornado, flood and earthquake. Business is assumed on both a proportional and excess of loss basis. In addition, facultative business is written which focuses on individual commercial property risks on an excess of loss basis.
- *Other*: includes life reinsurance business on both a proportional and non-proportional basis, casualty clash

business and, in limited instances, non-traditional business which is intended to provide insurers with risk management solutions that complement traditional reinsurance.

Underwriting Philosophy. Our reinsurance group employs a disciplined, analytical approach to underwriting reinsurance risks that is designed to specify an adequate premium for a given exposure commensurate with the amount of capital it anticipates placing at risk. A number of our reinsurance group's underwriters are also actuaries. It is our reinsurance group's belief that employing actuaries on the front-end of the underwriting process gives it an advantage in evaluating risks and constructing a high quality book of business.

As part of the underwriting process, our reinsurance group typically assesses a variety of factors, including:

- adequacy of underlying rates for a specific class of business and territory;
- the reputation of the proposed cedent and the likelihood of establishing a long-term relationship with the cedent, the geographic area in which the cedent does business, together with its catastrophe exposures, and our aggregate exposures in that area;
- historical loss data for the cedent and, where available, for the industry as a whole in the relevant regions, in order to compare the cedent's historical loss experience to industry averages;
- projections of future loss frequency and severity; and
- the perceived financial strength of the cedent.

Premiums Written and Geographic Distribution. Set forth below is summary information regarding net premiums written for our reinsurance group:

	Year Ended December 31,					
	2016		2015		2014	
	Amount	%	Amount	%	Amount	%
Other specialty	\$ 348,852	33	\$ 298,794	29	\$ 405,126	32
Casualty	305,252	29	303,093	29	317,996	25
Property excluding property catastrophe	267,548	25	280,511	27	343,043	27
Property catastrophe	75,789	7	91,620	9	137,471	11
Marine and aviation	37,790	4	50,834	5	50,444	4
Other	18,625	2	13,556	1	11,911	1
Total	\$1,053,856	100	\$1,038,408	100	\$1,265,991	100

By client location						
United States	\$ 448,763	43	\$ 470,484	45	\$ 589,255	47
Europe	337,168	32	307,165	30	355,735	28
Asia and Pacific	111,821	11	94,609	9	142,626	11
Bermuda	74,347	7	80,888	8	77,620	6
Other	81,757	8	85,262	8	100,755	8
Total	\$1,053,856	100	\$1,038,408	100	\$1,265,991	100

By underwriting location						
Bermuda	\$ 277,625	26	\$ 281,985	27	\$ 394,351	31
United States	432,683	41	439,190	42	492,891	39
Europe	308,415	29	298,790	29	343,823	27
Other	35,133	3	18,443	2	34,926	3
Total	\$1,053,856	100	\$1,038,408	100	\$1,265,991	100

Marketing. Our reinsurance group generally markets its reinsurance products through brokers, except our property facultative reinsurance group, which generally deals directly with the ceding companies. Brokers do not have the authority to bind our reinsurance group with respect to reinsurance agreements, nor does our reinsurance group commit in advance to accept any portion of the business that brokers submit to them. Our reinsurance group generally pays brokerage fees to brokers based on negotiated percentages of the premiums written through such brokers. For information on major brokers, see note 16, “Commitments and Contingencies—Concentrations of Credit Risk,” of the notes accompanying our consolidated financial statements.

Risk Management and Retrocession. Our reinsurance group currently purchases a combination of per event excess of loss, per risk excess of loss, proportional retrocessional agreements and other structures that are available in the market. Such arrangements reduce the effect of individual or aggregate losses on, and in certain cases may also increase the underwriting capacity of, our reinsurance group. Our reinsurance group will

continue to evaluate its retrocessional requirements based on its net appetite for risk. See note 8, “Reinsurance,” of the notes accompanying our consolidated financial statements.

For catastrophe exposed reinsurance business, our reinsurance group seeks to limit the amount of exposure it assumes from any one reinsured and the amount of the aggregate exposure to catastrophe losses from a single event in any one geographic zone. For a discussion of our risk management policies, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Ceded Reinsurance” and “Risk Factors—Risks Relating to Our Industry—The failure of any of the loss limitation methods we employ could have a material adverse effect on our financial condition or results of operations.”

Claims Management. Claims management includes the receipt of initial loss reports, creation of claim files, determination of whether further investigation is required, establishment and adjustment of case reserves and payment of claims. Additionally, audits are conducted for both specific claims and overall claims procedures at the offices of selected ceding companies. Our reinsurance group makes use of outside consultants for claims work from time to time.

Mortgage Operations

Our mortgage operations include U.S. and international mortgage insurance and reinsurance operations as well as GSE credit risk sharing transactions. Our mortgage group includes direct mortgage insurance in the U.S. primarily provided by Arch Mortgage Insurance Company (“AMIC”) and the operating subsidiaries of UGC, as well as through Arch Mortgage Guaranty Company; mortgage reinsurance by Arch Re Bermuda to mortgage insurers on both a proportional and non-proportional basis globally; direct mortgage insurance in Europe provided by Arch MI Europe; and various GSE credit risk-sharing products provided primarily by Arch Re Bermuda. Our U.S. mortgage insurance operations are collectively referred to as “Arch MI U.S.” in this report.

On January 30, 2014, we completed the acquisition of CMG Mortgage Insurance Company from its owners, PMI Mortgage Insurance Co., in Rehabilitation (“PMI”) and CMFG Life Insurance Company (“CUNA Mutual”) and acquired PMI’s mortgage insurance platform and related assets. CMG Mortgage Insurance Company was renamed “Arch Mortgage Insurance Company” and entered the U.S. mortgage insurance marketplace in 2014. AMIC, based in Walnut Creek, California, is licensed and operates in all 50 states, the District of Columbia and Puerto Rico.

On December 31, 2016, we completed the acquisition of UGC, as described earlier. UGC, based in Greensboro, North Carolina, operates its U.S. business through its primary

operating subsidiaries, United Guaranty Residential Insurance Company, which is licensed and operates in all 50 states, the District of Columbia and Puerto Rico, and United Guaranty Mortgage Indemnity Company, which is licensed in 48 states and the District of Columbia. As such, our balance sheet reflects the acquisition of UGC while our results of operations for 2016 do not include UGC activity other than the impact of capital raising activity and transaction costs.

AMIC, United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company have each been approved as an eligible mortgage insurer by Fannie Mae and Freddie Mac, subject to maintaining certain ongoing requirements (“eligible mortgage insurer”). Arch Mortgage Guaranty Company, an affiliate of AMIC, offers direct mortgage insurance to U.S. mortgage lenders with respect to mortgages that lenders intend to retain in portfolio or include in non-agency securitizations. Arch Mortgage Guaranty Company, which is licensed in all 50 states, insures mortgages that are not intended to be sold to the GSEs, and it is therefore not approved by either GSE as an eligible mortgage insurer.

Arch MI Europe was licensed and authorized by the Central Bank of Ireland (“CBOI”) in 2011 to operate on a pan-European basis under the European Freedom of Services Act. Arch MI Europe is headquartered in Dublin, Ireland. Arch Underwriters Europe Limited (“Arch Underwriters Europe”), an Ireland company authorized as an insurance and reinsurance intermediary by the CBOI, acts on behalf of Arch MI Europe and Arch Re Europe with branch offices in Italy, Switzerland, U.K., Finland and Cyprus.

As of February 20, 2017, our mortgage group had approximately 1,250 employees.

Strategy. The mortgage insurance market operates on its own distinct underwriting cycle, with demand driven mainly by the housing market and general economic conditions. As a result, the creation of the mortgage group provides us with a more diverse revenue stream. Our mortgage group’s strategy is to capitalize on its financial capacity, mortgage insurance technology platform, operational flexibility and experienced management to offer mortgage insurance, reinsurance and other risk-sharing products in the U.S. and around the world.

Our mortgage group’s operating principles and goals are to:

- *Expand our U.S. mortgage insurance business.* Prior to our 2014 acquisition, AMIC (formerly CMG Mortgage Insurance Company) was the leading provider of mortgage insurance products and services to credit unions in the U.S. We broadened its customer base into national and regional banks and mortgage originators while maintaining and increasing its share of the mortgage insurance credit union market. The acquisition of UGC, a leading provider of mortgage insurance products and services to national and

regional banks and mortgage originators through its subsidiaries, significantly increases our U.S. market share.

- *Capitalize on profitable underwriting opportunities.* Our mortgage group believes that its experienced management, analytics and underwriting teams are positioned to identify and evaluate business with attractive risk/reward characteristics.
- *Maintain a disciplined credit risk philosophy.* Our mortgage group’s credit risk philosophy is to generate underwriting profit through disciplined credit risk analysis and proper pricing. Our mortgage group believes that the key to this approach is adherence to uniform underwriting standards across all phases of the applicable housing and mortgage lending cycles.
- *Provide superior and innovative mortgage products and services.* Our mortgage group believes that it can leverage its financial capacity, experience across insurance product lines, and its analytics and technology to provide innovative products and superior service. The mortgage group believes that its delivery of tailored products that meet the specific, evolving needs of its customers will be a key to the group’s success.

Our mortgage group focuses on the following areas:

- *Direct mortgage insurance in the United States.* Under their monoline insurance licenses, each of Arch’s eligible mortgage insurers may only offer private mortgage insurance covering first lien, one-to-four family residential mortgages. Nearly all of our mortgage insurance written provides first loss protection on loans originated by mortgage lenders and sold to the GSEs. Each GSE’s Congressional charter generally prohibits it from purchasing a mortgage where the principal balance of the mortgage is in excess of 80% of the value of the property securing the mortgage unless the excess portion of the mortgage is protected against default by lender recourse, participation or by a qualified insurer. As a result, such “high loan-to-value mortgages” purchased by Fannie Mae or Freddie Mac generally are insured with private mortgage insurance.

Mortgage insurance protects the insured lender, investor or GSE against loss in the event of a borrower’s default. If a borrower defaults on mortgage payments, private mortgage insurance reduces, and may eliminate, losses to the insured. Private mortgage insurance may also facilitate the sale of mortgage loans in the secondary mortgage market because of the credit enhancement it provides. Our primary U.S. mortgage insurance policies predominantly cover individual loans and are effective at the time the loan is originated. We also may enter into insurance transactions with lenders and investors, under which we insure a

portfolio of loans at or after origination. In the future, we may offer mortgage insurance on a “pool” basis. Under pool insurance, the mortgage insurer provides coverage on a group of specified loans, typically for 100% of all contractual or policy-defined losses on every loan in the portfolio, subject to an agreed aggregate loss limit. Pool insurance may be in a first loss position with respect to loans that do not have primary mortgage insurance policies, or it may be in a second loss position, covering losses in excess of those covered by the primary mortgage insurance policy.

- *Direct mortgage insurance in Europe and other countries where we identify profitable underwriting opportunities.* Since 2011, Arch MI Europe has offered mortgage insurance to European mortgage lenders. Arch MI Europe’s mortgage insurance is primarily purchased by European mortgage lenders in order to reduce lenders’ credit risk and regulatory capital requirements associated with the insured mortgages. In certain European countries, lenders purchase mortgage insurance to facilitate regulatory compliance with respect to high loan-to-value residential lending. Arch MI Europe offers mortgage insurance on both a “flow” basis to cover new originations and through structured transactions to cover one or more portfolios of previously originated residential loans.
- *Reinsurance.* Arch Re Bermuda provides quota share reinsurance covering U.S. and international mortgages. Such amounts include a quota share reinsurance agreement with PMI pursuant to which it agreed to provide 100% quota share indemnity reinsurance to PMI for all certificates of insurance that were issued by PMI from January 1, 2009 through December 31, 2011 that were not in default as of an agreed upon effective date. Other than this quota share, no PMI legacy mortgage insurance exposures were assumed.
- *Other credit risk-sharing products.* In addition to providing traditional mortgage insurance and reinsurance, we offer various credit risk-sharing products to government agencies and mortgage lenders. The GSEs have reduced their exposure to mortgage risk and continue to shift more of it to the private sector, creating opportunities for insurers to assume additional mortgage risk. In 2013, Arch Re Bermuda became the first (re)insurance company to participate in Freddie Mac’s program to transfer certain credit risk in its single-family portfolio to the private sector. Since that time, Arch Re Bermuda and its affiliates have regularly participated in both Fannie Mae and Freddie Mac risk sharing programs.

Underwriting Philosophy. Our mortgage group believes in a disciplined, analytical approach to underwriting mortgage risks by utilizing proprietary and third party models, including forecasting delinquency and future home price movements with

the goal of ensuring that premiums are adequate for the risk being insured. Experienced actuaries and statistical modelers are engaged in analytics to inform the underwriting process. As part of the underwriting process, our mortgage group typically assesses a variety of factors, including the:

- ability and willingness of the mortgage borrower to pay its obligations under the mortgage loan being insured;
- characteristics of the mortgage loan being insured and value of the collateral securing the mortgage loan;
- financial strength, quality of operations and reputation of the lender originating the mortgage loan;
- expected future home price movements which vary by geography;
- projections of future loss frequency and severity; and
- adequacy of premium rates.

Premiums Written and Geographic Distribution. Set forth below is summary information regarding net premiums written for our mortgage group:

	Year Ended December 31,					
	2016		2015		2014	
	Amount	%	Amount	%	Amount	%
By client location						
United States	\$ 280,509	72	\$ 193,617	72	\$ 184,333	90
Other	110,957	28	73,876	28	20,504	10
Total	\$ 391,466	100	\$ 267,493	100	\$ 204,837	100
By underwriting location						
United States	\$ 186,826	48	\$ 125,317	47	\$ 98,809	48
Other	204,640	52	142,176	53	106,028	52
Total	\$ 391,466	100	\$ 267,493	100	\$ 204,837	100

Sales and Distribution. We employ a sales force located throughout the U.S. to directly sell mortgage insurance products and services to its bank customers. AMIC has entered into a distribution services agreement with CUNA Mutual (a former part owner of AMIC) pursuant to which CUNA Mutual sales employees exclusively market AMIC mortgage insurance products to credit union customers. In Europe and Bermuda, our products and services are distributed on a direct basis and through brokers. Each country represents a unique set of opportunities and challenges that require knowledge of market conditions and client needs to develop effective solutions.

Risk Management. Exposure to mortgage risk is monitored globally and managed through underwriting guidelines, reinsurance, concentration limits and limits on net probable loss resulting from a severe economic downturn in the housing market. For a discussion of our risk management policies, see “Management’s Discussion and Analysis of Financial

Condition and Results of Operations—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Ceded Reinsurance” and “Risk Factors—Risks Relating to Our Industry—The failure of any of the loss limitation methods we employ could have a material adverse effect on our financial condition or results of operations.” Our mortgage group has ceded a portion of its premium on a quota share basis through certain reinsurance agreements. Reinsurance arrangements do not relieve our mortgage group from its primary obligations to insured parties. Reinsurance recoverables are recorded as assets, predicated on the reinsurers’ ability to meet their obligations under the reinsurance agreements. If the reinsurers are unable to satisfy their obligations under the agreements, our mortgage subsidiaries would be liable for such defaulted amounts.

Claims Management. With respect to our direct mortgage insurance business, the claims process generally begins with notification by the insured or servicer to us of a default on an insured loan. The insured is generally required to notify us of a default after the borrower becomes two consecutive monthly payments in default. Borrowers default for a variety of reasons, including a reduction of income, unemployment, divorce, illness, inability to manage credit, rising interest rate levels and declining home prices. Upon notice of a default, in certain cases we may coordinate with loan servicers to facilitate and enhance retention workouts on insured loans. Retention workouts include loan modifications and other loan repayment options, which may enable borrowers to cure mortgage defaults and retain ownership of their homes. If a retention workout is not viable for a borrower, our loss on a loan may be mitigated through a liquidation workout option, including a pre-foreclosure sale or a deed-in-lieu of foreclosure.

In the U.S., our master policies generally provide that within 60 days of the perfection of a primary insurance claim, we have the option of:

- paying the insurance coverage percentage specified in the certificate of insurance multiplied by the loss amount;
- in the event the property is sold pursuant to an approved prearranged sale, paying the lesser of (i) 100% of the loss amount less the proceeds of sale of the property, or (ii) the specified coverage percentage multiplied by the loss amount; or
- paying 100% of the loss amount in exchange for the insured’s conveyance to us of good and marketable title to the property, with us then selling the property for our own account.

While we select the claim settlement option that best mitigates the amount of our claim payment, in the U.S. we generally pay the coverage percentage multiplied by the loss amount.

Other Operations

In March 2014, we and HPS Investment Partners, LLC (formerly Highbridge Principal Strategies, LLC) (“HPS”), sponsored Watford Re. Arch Re Bermuda invested \$100.0 million and acquired approximately 11% of Watford Re and a warrant to purchase additional common equity. Watford Re’s strategy is to combine a diversified reinsurance and insurance business with a disciplined investment strategy comprised primarily of non-investment grade credit assets. Watford Re has its own management and board of directors and is responsible for the overall profitability of its results. Arch Re Bermuda has appointed two directors to serve on the six person board of directors of Watford Re. We performed an analysis of Watford Re and concluded that Watford Re is a variable interest entity and that we are the primary beneficiary of Watford Re. As such, 100% of the results of Watford Re are included in our consolidated financial statements.

In January 2017, we and Kelso & Company (“Kelso”) sponsored Premia Re. Premia Re’s strategy is to reinsure or acquire companies or reserve portfolios in the non-life property and casualty insurance and reinsurance run-off market. Arch Re Bermuda and certain Arch co-investors invested \$100.0 million and acquired approximately 25% of Premia Re as well as warrants to purchase additional common equity. Affiliates of Kelso invested \$300.0 million and acquired the balance of Premia Re as well as warrants to purchase additional common equity. Arch Re Bermuda will provide a 25% whole account quota share reinsurance treaty on business written by Premia Re, and subsidiaries of ACGL will provide certain administrative and support services to Premia Re, in each case pursuant to separate multi-year agreements. Arch Re Bermuda has appointed two directors to serve on the seven person board of directors of Premia Re.

Employees

As of February 20, 2017, ACGL and its subsidiaries employed approximately 3,250 full-time employees.

RESERVES

Reserve estimates are derived after extensive consultation with individual underwriters and claims professionals, actuarial analysis of the loss reserve development and comparison with industry benchmarks. Our reserves are established and reviewed by experienced internal actuaries. Generally, reserves are established without regard to whether we may subsequently contest the claim. We do not currently discount our loss reserves except for excess workers’ compensation and employers’ liability loss reserves in our insurance operations.

Loss reserves represent estimates of what the insurer or reinsurer ultimately expects to pay on claims at a given time, based on facts and circumstances then known, and it is probable

that the ultimate liability may exceed or be less than such estimates. Even actuarially sound methods can lead to subsequent adjustments to reserves that are both significant and irregular due to the nature of the risks written. Loss reserves are inherently subject to uncertainty. In establishing the reserves for losses and loss adjustment expenses, we have made various assumptions relating to the pricing of our reinsurance contracts and insurance policies and have also considered available historical industry experience and current industry conditions. The timing and amounts of actual claim payments related to recorded reserves vary based on many factors including large individual losses and changes in the legal environment, as well as general market conditions. The ultimate amount of the claim payments could differ materially from our estimated amounts. Certain lines of business written by us, such as excess casualty, have loss experience characterized as low frequency and high severity. This may result in significant variability in loss payment patterns and, therefore, may impact the related asset/liability investment management process in order to be in a position, if necessary, to make these payments. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Reserves for Losses and Loss Adjustment Expenses.”

Our initial reserving method to date has to a large extent been the expected loss method, which is commonly applied when limited loss experience exists. We select the initial expected loss and loss adjustment expense ratios based on information derived by our underwriters and actuaries during the initial pricing of the business, supplemented by industry data where appropriate. These ratios consider, among other things, rate changes and changes in terms and conditions that have been observed in the market. Any estimates and assumptions made as part of the reserving process could prove to be inaccurate due to several factors, including the fact that relatively limited historical information has been reported to us through December 31, 2016. We employ a number of different reserving methods depending on the segment, the line of business, the availability of historical loss experience and the stability of that loss experience. Over time, we have given additional weight to our historical loss experience in our reserving process due to the continuing maturation of our reserves, and the increased availability and credibility of the historical experience. For additional information regarding the key underlying movements in our losses and loss adjustment expenses by segment, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations.”

The following table represents an analysis of consolidated losses and loss adjustment expenses and a reconciliation of the beginning and ending reserve for losses and loss adjustment expenses:

	Year Ended December 31,		
	2016	2015	2014
Reserve for losses and loss adjustment expenses at beginning of year	\$ 9,125,250	\$ 9,036,448	\$ 8,824,696
Unpaid losses and loss adjustment expenses recoverable	1,828,837	1,778,303	1,748,250
Net reserve for losses and loss adjustment expenses at beginning of year	7,296,413	7,258,145	7,076,446
Net incurred losses and loss adjustment expenses relating to losses occurring in:			
Current year	2,455,563	2,336,026	2,246,152
Prior years	(269,964)	(285,123)	(326,902)
Total net incurred losses and loss adjustment expenses	2,185,599	2,050,903	1,919,250
Net losses and loss adjustment expense reserves of acquired business (1)	551,096	262	120,671
Foreign exchange (gains) losses	(102,367)	(143,653)	(160,486)
Net paid losses and loss adjustment expenses relating to losses occurring in:			
Current year	(445,700)	(454,179)	(347,270)
Prior years	(1,367,656)	(1,415,065)	(1,350,466)
Total net paid losses and loss adjustment expenses	(1,813,356)	(1,869,244)	(1,697,736)
Net reserve for losses and loss adjustment expenses at end of year	8,117,385	7,296,413	7,258,145
Unpaid losses and loss adjustment expenses recoverable	2,083,575	1,828,837	1,778,303
Reserve for losses and loss adjustment expenses at end of year	\$10,200,960	\$ 9,125,250	\$ 9,036,448

(1) 2016 amount relates to our acquisition of UGC while the 2014 amount relates to our acquisition of AMIC.

Unpaid and paid losses and loss adjustment expenses recoverable were approximately \$2.11 billion at December 31, 2016. We are subject to credit risk with respect to our reinsurance and retrocessions because the ceding of risk to reinsurers and retrocessionaires does not relieve us of our liability to the clients or companies we insure or reinsure. Our failure to establish adequate reinsurance or retrocessional arrangements or the failure of our existing reinsurance or retrocessional arrangements to protect us from overly concentrated risk exposure could materially adversely affect our financial condition and results of operations. Although we monitor the financial condition of our reinsurers and retrocessionaires and attempt to place coverages only with substantial, financially sound carriers, we may not be successful in doing so.

INVESTMENTS, RATINGS, COMPETITION, ENTERPRISE RISK MANAGEMENT

Investments

At December 31, 2016, total investable assets held by Arch were \$18.64 billion, excluding the \$1.86 billion included in the ‘other’ segment (*i.e.*, attributable to Watford Re). See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Financial Condition, Liquidity and Capital Resources—Financial Condition—Investable Assets” and note 9, “Investment Information,” of the notes accompanying our financial statements.

On December 31, 2016, the UGC acquisition was completed. As such, our balance sheet reflects the acquisition of UGC while our results of operations for 2016 do not include UGC activity other than the impact of capital raising activity and transaction costs.

The following table summarizes our invested assets:

	December 31, 2016		December 31, 2015	
	Amount	%	Amount	%
Investable assets (1) (2):				
Fixed maturities available for sale, at fair value	\$ 13,426,577	72.0	\$ 10,459,353	71.4
Fixed maturities, at fair value (3)	364,856	2.0	367,780	2.5
Fixed maturities pledged under securities lending agreements, at fair value	730,341	3.9	373,304	2.5
Total fixed maturities	14,521,774	77.9	11,200,437	76.5
Short-term investments available for sale, at fair value	612,005	3.3	587,904	4.0
Short-term investments, at fair value (3)	64,542	0.3	—	—
Cash	768,049	4.1	444,776	3.0
Equity securities available for sale, at fair value	518,041	2.8	618,405	4.2
Equity securities, at fair value (3)	25,328	0.1	798	—
Equity securities pledged under securities lending agreements, at fair value	14,639	0.1	10,777	0.1
Other investments available for sale, at fair value	167,970	0.9	300,476	2.1
Other investments, at fair value (3)	1,108,871	6.0	908,809	6.2
Investments accounted for using the equity method (4)	811,273	4.4	592,973	4.0
Securities transactions entered into but not settled at the balance sheet date	23,697	0.1	(20,524)	(0.1)
Total investable assets held by Arch	\$ 18,636,189	100.0	\$ 14,644,831	100.0

- (1) The table above excludes investable assets attributable to the ‘other’ segment. Such amounts are summarized as follows:

(U.S. dollars in thousands)	December 31, 2016	December 31, 2015
Investable assets in ‘other’ segment:		
Cash	\$ 74,893	\$ 108,550
Investments accounted for using the fair value option	1,857,623	1,617,107
Securities sold but not yet purchased	(33,157)	(30,583)
Securities transactions entered into but not settled at the balance sheet date	(41,596)	1,033
Total investable assets included in ‘other’ segment	\$ 1,857,763	\$ 1,696,107

- (2) This table excludes the collateral received and reinvested and includes the fixed maturities pledged under securities lending agreements, at fair value.
- (3) Represents investments which are carried at fair value under the fair value option and reflected as “investments accounted for using the fair value option” on our balance sheet. Changes in the carrying value of such investments are recorded in net realized gains or losses.
- (4) Changes in the carrying value of investment funds accounted for using the equity method are recorded as “equity in net income (loss) of investment funds accounted for using the equity method” rather than as an unrealized gain or loss component of accumulated other comprehensive income.

Our current investment guidelines and approach stress preservation of capital, market liquidity and diversification of risk. Our investments are subject to market-wide risks and fluctuations, as well as to risks inherent in particular securities. While maintaining our emphasis on preservation of capital and liquidity, we expect our portfolio to become more diversified and, as a result, we may in the future expand into areas which are not part of our current investment strategy. Our fixed maturities, fixed maturities pledged under securities lending agreements and short-term investments had an average credit quality rating of “AA” from S&P and “Aa2” from Moody’s Investors Service (“Moody’s”) at both December 31, 2016 and 2015. Our investment portfolio had an average effective duration of approximately 3.64 years and 3.43 years at December 31, 2016 and 2015, respectively. At December 31, 2016, 95.1% of our fixed maturities and fixed maturities pledged under securities lending agreements were rated investment grade, compared to 94.7% at December 31, 2015.

The credit quality distribution of our fixed maturities and fixed maturities pledged under securities lending agreements are shown below:

Rating (1)	December 31, 2016		December 31, 2015	
	Fair Value	%	Fair Value	%
U.S. government and government agencies (2)	\$ 3,210,899	22.1	\$ 3,060,869	27.3
AAA	3,918,739	27.0	4,000,750	35.7
AA	3,148,226	21.7	1,651,760	14.7
A	2,338,834	16.1	1,431,138	12.8
BBB	1,203,942	8.3	457,251	4.1
BB	226,321	1.6	203,426	1.8
B	156,405	1.1	138,770	1.2
Lower than B	90,833	0.6	130,545	1.2
Not rated	227,574	1.6	125,928	1.1
Total	\$ 14,521,774	100.0	\$ 11,200,437	100.0

- (1) For individual fixed maturities, S&P ratings are used. In the absence of an S&P rating, ratings from Moody's are used, followed by ratings from Fitch Ratings.
- (2) Includes U.S. government-sponsored agency mortgage backed securities and agency commercial mortgage backed securities.

The benchmark return index is a customized combination of indices intended to approximate a target portfolio by asset mix and average credit quality while also matching the approximate estimated duration and currency mix of our insurance and reinsurance liabilities (see "Management's Discussion and Analysis of Financial Condition and Results of Operations—General—Financial Measures—Total Return on Investments"). The following table summarizes the pre-tax total return (before investment expenses) of investment held by Arch compared to the benchmark return (both based in U.S. Dollars) against which we measured our portfolio during the periods:

	Arch Portfolio (1)	Benchmark Return
Pre-tax total return (before investment expenses):		
Year Ended December 31, 2016	2.07%	2.13 %
Year Ended December 31, 2015	0.41%	(0.38)%
Year Ended December 31, 2014	3.21%	2.58 %

- (1) Our investment expenses were approximately 0.34%, 0.35% and 0.28%, respectively, of average invested assets in 2016, 2015 and 2014.

Ratings

Our ability to underwrite business is affected by the quality of our claims paying ability and financial strength ratings as evaluated by independent agencies. Such ratings from third party internationally recognized statistical rating organizations or agencies are instrumental in establishing the financial security of companies in our industry. We believe that the primary users of such ratings include commercial and investment banks, policyholders, brokers, ceding companies and investors. Insurance ratings are also used by insurance and reinsurance intermediaries as an important means of assessing the financial strength and quality of insurers and reinsurers, and are often an important factor in the decision by an insured or intermediary of whether to place business with a particular insurance or reinsurance provider. Periodically, rating agencies evaluate us to confirm that we continue to meet their criteria for the ratings assigned to us by them. A.M. Best Company ("A.M. Best"), Fitch Ratings ("Fitch"), Moody's and S&P are ratings agencies which have assigned financial strength and/or issuer ratings to ACGL and/or one or more of its subsidiaries. The ratings issued on our companies by these agencies are announced publicly and are available directly from the agencies.

Following the completion of our purchase of UGC on December 31, 2016, all four of the major rating agencies commented on the financial implications to the ratings of ACGL and its operating insurance, reinsurance and mortgage companies. All of our ratings from A.M. Best remain under review with developing implications. Under review with developing implications means that our ratings could be raised, lowered or remain unchanged following this review.

On January 3, 2017, Fitch affirmed the "A+" financial strength ratings (Stable Outlook) of our property casualty reinsurance and insurance companies which are rated by Fitch and downgraded our senior debt ratings and our preferred share ratings by one notch. The downgrade of the debt and preferred ratings reflect Fitch's change to a "ring-fencing environment classification" for us following the purchase of UGC. Under Fitch's rating criteria, a ring-fencing approach is applied to global groups that have more than 30% of capital or earnings from foreign subsidiaries. Our senior debt and preferred share ratings remain on negative watch pending Fitch's review of the financial strength of UGC and its implications on the overall credit quality of ACGL, our holding company. A negative watch on the senior debt and preferred share ratings indicates that these ratings could be lowered or remain the same following the completion of their review.

Moody's lowered the financial strength ratings of our property casualty insurance and reinsurance operating subsidiaries rated by Moody's to "A2" from "A1" on January 5, 2017 and also lowered the ratings on our senior debt and preferred shares by one notch; the outlook for these ratings is stable. These

downgrades reflect Moody's view that the acquisition of UGC increases our credit risk profile due to the substantial expansion of our mortgage insurance operations and a significant increase in ACGL's financial leverage used to finance a portion of the UGC acquisition. Moody's placed a positive outlook on the "Baa1" financial strength ratings of United Guaranty Residential Insurance Company, AMIC and Arch Mortgage Guaranty Company. The positive outlook on the mortgage insurance operations reflects the improvement in the stand-alone credit profile of the combined mortgage insurance platform following the UGC acquisition.

S&P raised its financial strength ratings on United Guaranty Residential Insurance Company to "A" from "BBB+", AMIC to "A" from "A-" and United Guaranty Mortgage Indemnity Company to "A-" from "BBB+" on January 3, 2017. S&P's "A+" financial strength ratings on our property casualty insurance and reinsurance companies rated by S&P, and our senior debt ratings were unchanged. However, the outlook for these ratings was changed to negative to reflect execution concerns related to our ability to manage our business mix, to integrate mortgage exposure within our risk management framework, and to maintain a strong capitalization.

The financial strength ratings assigned by rating agencies to insurance and reinsurance companies represent independent opinions of financial strength and ability to meet policyholder obligations and are not directed toward the protection of investors, nor are they recommendations to buy, hold or sell any securities. We can offer no assurances that our ratings will remain at their current levels, or that our security will be accepted by brokers and our insureds and reinsureds. A ratings downgrade or the potential for such a downgrade, or failure to obtain a necessary rating, could adversely affect both our relationships with agents, brokers, wholesalers and other distributors of our existing products and services and new sales of our products and services. In addition, under certain of the reinsurance agreements assumed by our reinsurance operations, upon the occurrence of a ratings downgrade or other specified triggering event with respect to our reinsurance operations, such as a reduction in surplus by specified amounts during specified periods, our ceding company clients may be provided with certain rights, including, among other things, the right to terminate the subject reinsurance agreement and/or to require that our reinsurance operations post additional collateral. In the event of a ratings downgrade or other triggering event, the exercise of such contract rights by our clients could have a material adverse effect on our financial condition and results of operations, as well as our ongoing business and operations. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Financial Condition, Liquidity and Capital Resources—Liquidity and Capital Resources."

Competition

The worldwide reinsurance and insurance businesses are highly competitive. We compete, and will continue to compete, with major U.S. and non-U.S. insurers and reinsurers, some of which have greater financial, marketing and management resources than we have and have had longer-term relationships with insureds and brokers than us. We compete with other insurers and reinsurers primarily on the basis of overall financial strength, ratings assigned by independent rating agencies, geographic scope of business, strength of client relationships, premiums charged, contract terms and conditions, products and services offered, speed of claims payment, reputation, employee experience, and qualifications and local presence.

In our insurance business, we compete with insurers that provide specialty property and casualty lines of insurance, including Alleghany Corporation, Allied World Assurance Company, Ltd., American Financial Group, Inc., American International Group, Inc., Aspen Insurance Holdings Limited, AXIS Capital Holdings Limited, Berkshire Hathaway, Inc., Chubb Limited, CNA Financial Corp., Endurance Specialty Holdings Ltd., Fairfax Financial Holdings Limited, The Hartford Financial Services Group, Inc., Ironshore Inc., Liberty Mutual Insurance, Lloyd's, Markel Insurance Company, RLI Corp., Tokio Marine HCC, The Travelers Companies, W.R. Berkley Corp., XL Group Ltd and Zurich Insurance Group. In our reinsurance business, we compete with reinsurers that provide property and casualty lines of reinsurance, including Alleghany Corporation, Argo International Holdings, Ltd., AXIS Capital Holdings Limited, Berkshire Hathaway, Inc., Chubb Limited, Endurance Specialty Holdings Ltd., Everest Re Group Ltd., Hannover Rückversicherung AG, Lloyd's, Markel Global Reinsurance, Munich Re Group, PartnerRe Ltd., RenaissanceRe Holdings Ltd., SCOR Global P&C, SCOR Global Life, Swiss Reinsurance Company, Third Point Reinsurance Ltd., Validus Holdings Ltd. and XL Group Ltd.

In our U.S. mortgage business, we compete with five active U.S. mortgage insurers, which include the mortgage insurance subsidiaries of Essent Group Ltd., Genworth Financial Inc., MGIC Investment Corporation, NMI Holdings Inc. and Radian Group Inc. The private mortgage insurance industry is highly competitive. Private mortgage insurers generally compete on the basis of underwriting guidelines, pricing, terms and conditions, financial strength, product and service offerings, customer relationships, reputation, the strength of management, technology, and innovation in the delivery and servicing of insurance products. Arch MI U.S. and other private mortgage insurers compete with federal and state government agencies that sponsor their own mortgage insurance programs. The private mortgage insurers' principal government competitor is the Federal Housing Administration ("FHA") and, to a lesser degree, the U.S. Department of Veterans Affairs ("VA"). The mortgage insurance industry's business has been limited as a result of competition with the FHA, which substantially

increased its market share beginning in 2008. In early 2015 and again in early 2017, the FHA reduced up-front and annual premium rates, respectively, associated with its mortgage insurance program; however, the Trump administration put the FHA's most recent pricing action on hold. Future changes to the FHA program may impact the demand for private mortgage insurance.

Arch MI U.S. and other private mortgage insurers increasingly compete with multi-line reinsurers and capital markets alternatives to private mortgage insurance. In 2016, the GSEs expanded their respective mortgage credit risk transfer (CRT) programs which generally did not include the purchase of private mortgage insurance from U.S. private mortgage insurers. Rather, these transactions led to increased opportunities for multiline property casualty reinsurance groups including, among others, PartnerRe Ltd., Transatlantic Reinsurance Company, Everest Re Group Ltd. and RenaissanceRe Holdings Ltd. along with capital markets participants. The ongoing expansion of the GSEs risk transfer programs continues to attract additional reinsurers into the market and we continue to see increased competition as a result.

For other U.S. risk sharing products and non-U.S. mortgage insurance opportunities, we have also seen increased competition from well capitalized and highly rated multiline reinsurers. It is our expectation that the depth and capacity of competitors from this segment will continue to increase over the next several years as more residential mortgage credit risk is borne by private capital.

Enterprise Risk Management

Enterprise Risk Management ("ERM") is a key element in our philosophy, strategy and culture. We employ an ERM framework that includes underwriting, reserving, investment, credit and operational risks. Risk appetite and exposure limits are set by our executive management team, reviewed with our board of directors and board level committees and routinely discussed with business unit management. These limits are articulated in our risk appetite statement, which details risk appetite, tolerances and limits for each major risk category, and are integrated into our operating guidelines. Exposures are aggregated and monitored periodically by our corporate risk management team. The reporting, review and approval of risk management information is integrated into our annual planning process, capital modeling and allocation, reinsurance purchasing strategy and reviewed at insurance business reviews, reinsurance underwriting meetings and board level committees. For a discussion of our risk management policies, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Ceded Reinsurance" and "Risk Factors—Risks Relating to Our Industry—The failure of any of the loss limitation methods we

employ could have a material adverse effect on our financial condition or results of operations."

REGULATION

Bermuda Insurance Regulation

The Insurance Act 1978 of Bermuda and Related Rules and Regulations ("Insurance Act"). Arch Re Bermuda is subject to the Insurance Act, which provides that no person shall carry on any insurance business in or from within Bermuda unless registered as an insurer under the Insurance Act by the Bermuda Monetary Authority (the "BMA"), which is responsible for the day-to-day supervision of insurers. Under the Insurance Act, insurance business includes reinsurance business. We believe that we are in compliance with all applicable regulations under the Insurance Act.

The Insurance Act imposes solvency and liquidity standards and auditing and reporting requirements on Bermuda insurance companies and grants to the BMA powers to supervise, investigate and intervene in the affairs of insurance companies. Certain significant aspects of the Bermuda insurance regulatory framework are set forth below.

Classification of Insurers. The Insurance Act distinguishes between insurers carrying on long-term business, insurers carrying on general business and insurers carrying on special purpose business. There are six general business classifications (Classes 1, 2, 3, 3A, 3B and 4), five long-term business classifications (Classes A, B, C, D and E) and one classification of special purpose insurer.

As Arch Re Bermuda carries on both long-term and general business, it is required to be registered as both a long-term and as a general business insurer under the Insurance Act. Accordingly, Arch Re Bermuda is registered as a Class 4 general business insurer and as a Class C long-term insurer. Class 4 insurers are regarded as large commercial underwriters and are subject to the strictest regulation. Class C insurers are regarded as small commercial underwriters and are subject to less stringent regulation.

Minimum Paid-Up Share Capital. Arch Re Bermuda is required to maintain fully paid-up share capital of \$1.25 million.

Annual Financial Statements, Annual Statutory Financial Return and Annual Capital and Solvency Return. Arch Re Bermuda must prepare annual statutory financial statements as prescribed in the Insurance Act with respect to both its general business and its long-term business. The statutory financial statements are distinct from the annual GAAP basis financial statements referred to below. The statutory financial return for a Class 4 insurer shall include a report of the approved independent auditor on the statutory financial statement of such

insurer, solvency certificates, the statutory financial statements for the general business, the opinion of the loss reserve specialist and a schedule of reinsurance ceded. The statutory financial return for a Class C insurer shall include a report of the approved independent auditor on the statutory financial statements of such insurer, the statutory financial statements related to the long-term business, a declaration of the statutory ratios, the long-term business solvency certificate and a certificate from the approved actuary. Arch Re Bermuda is also required to file audited GAAP basis annual financial statements, which must be available to the public. In addition, Arch Re Bermuda is required to file a capital and solvency return in respect of its general business and long-term business. The capital and solvency return includes its relevant regulatory risk-based capital model, a schedule of fixed income investments by ratings categories, a schedule of net reserves for losses and loss expense provisions by line of business, a schedule of premiums written by line of business, a schedule of risk management and a schedule of fixed income securities, a schedule of commercial insurer's solvency self assessment, a schedule of catastrophe risk return, a schedule of loss triangles or reconciliation of net loss reserves and a schedule of eligible capital. In addition, Arch Re Bermuda will also be required to prepare and submit to the BMA financial statements which have been prepared in accordance with GAAP or IFRS ("GAAP financial statements"). In lieu of GAAP financial statements, Arch Re Bermuda may submit condensed general purpose financial statements prepared in accordance with any insurance accounts rules. Arch Re Bermuda will, at the time of filing its statutory financial statements, also be required to deliver to the BMA a declaration of compliance, in such form and with such content as may be prescribed by the BMA.

Public Disclosures. Pursuant to recent amendments to the Insurance Act, all commercial insurers are required to prepare and file with the BMA, and also publish on their website, a financial condition report.

Minimum Solvency Margins. Arch Re Bermuda, as a Class 4 insurer, is required to ensure that the value of its general business assets exceeded the amount of its general business liabilities by an amount greater than the prescribed minimum solvency margin (and enhanced capital requirement pertaining to its general business). Accordingly, Arch Re Bermuda is required to maintain a minimum solvency margin equal to the greatest of (i) \$100 million, (ii) 50% of net premiums written (being gross premiums written less any premiums ceded by Arch Re Bermuda, but Arch Re Bermuda may not deduct more than 25% of gross premiums when computing net premiums written), (iii) 15% of net discounted aggregate losses and loss expense provisions and other insurance reserves and (iv) 25% of its enhanced capital requirement. Arch Re Bermuda is also required, with respect to its long-term business, to maintain a minimum solvency margin equal to the greater of \$500,000 or 1.5% of its assets. For the purpose of this calculation, assets are defined as the total assets pertaining to its long-term business

reported on the balance sheet in the relevant year less the amounts held in a segregated account.

Enhanced Capital Requirement. As a Class 4 insurer, Arch Re Bermuda is required to maintain available statutory economic capital and surplus pertaining to its general business at a level equal to or in excess of its enhanced capital requirement which is established by reference to either the Bermuda Solvency Capital Requirement model ("BSCR") or an approved internal capital model. The BSCR model is a risk-based capital model which provides a method for determining an insurer's capital requirements (statutory capital and surplus) by taking into account the risk characteristics of different aspects of the insurer's business. While not specifically referred to in the Insurance Act, the BMA has also established a target capital level for each Class 4 insurer equal to 120% of its enhanced capital requirement. While a Class 4 insurer is not currently required to maintain its statutory capital and surplus at this level, the target capital level serves as an early warning tool for the BMA, and failure to maintain statutory capital at least equal to the target capital level will likely result in increased regulatory oversight. As a Class C insurer, Arch Re Bermuda is also required to maintain available statutory economic capital and surplus in respect of its long-term business at a level equal to or in excess of its long-term enhanced capital requirement which is established by reference to either the Class C BSCR model or an approved internal capital model.

Eligible Capital. To enable the BMA to better assess the quality of the insurer's capital resources, as a Class 4 insurer, Arch Re Bermuda is required to disclose the makeup of its capital in accordance with a 3-tiered eligible capital system. Under this system, all of the insurer's capital instruments will be classified as either basic or ancillary capital, which in turn will be classified into one of three tiers based on their "loss absorbency" characteristics. Highest quality capital will be classified Tier 1 Capital, lesser quality capital will be classified as either Tier 2 Capital or Tier 3 Capital. A minimum threshold of Tier 1 and maximum thresholds of Tier 2 and Tier 3 Capital used to support Arch Re Bermuda's minimum solvency margin and enhanced capital requirement are specified under the rules. Tier 1, Tier 2 and Tier 3 Capital may, until January 1, 2024, include capital instruments that do not satisfy the requirement that the instrument be non-redeemable or settled only with the issuance of an instrument of equal or higher quality upon a breach, or if it would cause a breach, of the enhanced capital requirement. Where the BMA approved the use of certain instruments for capital purposes prior to the implementation of the eligible capital rules, the BMA's consent must be obtained if such instruments are to remain eligible for use in satisfying the minimum solvency margin pertaining to its general business and its enhanced capital requirement.

Minimum Liquidity Ratio. Arch Re Bermuda is required to maintain a minimum liquidity ratio for general business equal to the value of its relevant assets at not less than 75% of the

amount of its relevant liabilities. Relevant assets include cash and time deposits, quoted investments, unquoted bonds and debentures, first liens on real estate, investment income due and accrued, accounts and premiums receivable and reinsurance balances receivable. The relevant liabilities are total general business insurance reserves and total other liabilities less deferred income tax and sundry liabilities (by interpretation, those not specifically defined) and letters of credit and guarantees.

Restrictions on Dividends and Distributions. Arch Re Bermuda is prohibited from declaring or paying any dividends during any financial year if it is in breach of its enhanced capital requirement or its general business or long-term solvency margins or its minimum liquidity ratio or if the declaration or payment of such dividends would cause such a breach. If it has failed to meet its minimum solvency margins or minimum liquidity ratio on the last day of any financial year, Arch Re Bermuda will be prohibited, without the approval of the BMA, from declaring or paying any dividends during the next financial year. In addition, Arch Re Bermuda is prohibited from declaring or paying in any financial year dividends of more than 25% of its total statutory capital and surplus (as shown on its previous financial year's statutory balance sheet) unless it files (at least seven days before payment of such dividends) with the BMA an affidavit stating that it will continue to meet the required margins.

Reduction of Capital. Without the approval of the BMA, Arch Re Bermuda is prohibited from reducing by 15% or more its total statutory capital as set out in its previous year's financial statements and any application for such approval must include an affidavit stating that it will continue to meet the required margins.

Long-Term Business Fund. An insurer carrying on long-term business is required to keep its accounts in respect of its long-term business separate from any accounts kept in respect of any other business. All receipts of its long-term business form part of its long-term business fund. No payment may be made directly or indirectly from an insurer's long-term business fund for any purpose other than a purpose related to the insurer's long-term business, unless such payment can be made out of any surplus certified by the insurer's approved actuary to be available for distribution other than to policyholders. Arch Re Bermuda may not declare or pay a dividend to any person other than a policyholder unless the value of the assets in its long-term business fund, as certified by its approved actuary, exceeds the extent (as so certified) of the liabilities of the insurer's long-term business. In addition, the amount of such dividend shall not exceed the aggregate of that excess and any other funds properly available for payment of dividends, being funds arising out of business of the insurer other than its long-term business.

Restrictions on Transfer of Business and Winding-Up. As a long-term insurer, Arch Re Bermuda may only transfer long-

term business, other than long-term business that is reinsurance business, with the sanction of the applicable Bermuda court. A long-term insurer may only be wound-up or liquidated by order of the applicable Bermuda court.

Fit and Proper Controllers. The BMA maintains supervision over the controllers of all registered insurers in Bermuda. A controller includes: the managing director of the registered insurer or its parent company; the chief executive of the registered insurer or of its parent company; a shareholder controller; and any person in accordance with whose directions or instructions the directors of the registered insurer or of its parent company are accustomed to act. The definition of shareholder controller is set out in the Insurance Act, but generally refers to (i) a shareholder who holds 10% or more of the shares carrying rights to vote at a shareholders' meeting of the registered insurer or its parent company, or (ii) a shareholder who is entitled to exercise 10% or more of the voting power at any shareholders' meeting of such registered insurer or its parent company, or (iii) a shareholder who is able to exercise significant influence over the management of the registered insurer or its parent company by virtue of its shareholding or its entitlement to exercise, or control the exercise of, the voting power at any shareholders' meeting.

Where the shares of the shareholder of a registered insurer, or the shares of its parent company, are traded on a recognized stock exchange, and such shareholder becomes a 10%, 20%, 33% or 50% shareholder controller of the insurer, that shareholder shall, within 45 days, notify the BMA in writing that such shareholder has become such a controller. Similarly, if such shareholder controller reduces or disposes of its shareholding and such would result in its interest falling below any of the prescribed thresholds, then that shareholder controller must, within 45 days, notify the BMA of such disposal. The BMA may file a notice of objection to any shareholder who has become a controller of any description where it appears that such shareholder is, or is no longer, a fit and proper shareholder to be a controller of the registered insurer.

Insurance Code of Conduct. Arch Re Bermuda is subject to the Insurance Code of Conduct (the "Insurance Code"), which establishes duties and standards which must be complied with to ensure it implements sound corporate governance, risk management and internal controls. Failure to comply with the requirements under the Insurance Code will be a factor taken into account by the BMA in determining whether an insurer is conducting its business in a sound and prudent manner as prescribed by the Insurance Act. Failure to comply with the requirements of the Insurance Code could result in the BMA exercising its powers of intervention and will be a factor in calculating the operational risk charge applicable in accordance with that insurer's risk based capital model.

Group Supervision. The BMA acts as group supervisor of our group of insurance and reinsurance companies (“Group”) and has designated Arch Re Bermuda as the designated insurer (“Designated Insurer”). Pursuant to its powers under the Insurance Act, the BMA maintains a register of particulars for the Group detailing, among other things, the names and addresses of the Designated Insurer; each member company of the Group falling within the scope of supervision; the principal representative of the Group in Bermuda; other competent authorities supervising other member companies of the Group; and the Group auditors. The Designated Insurer must notify the BMA of any changes to the above details entered on the register of the Group.

As Group supervisor, the BMA performs a number of supervisory functions including: coordinating the gathering and dissemination of information which is of importance for the supervisory task of other competent authorities; carrying out a supervisory review and assessment of the Group; carrying out an assessment of the Group’s compliance with the rules on solvency, risk concentration, intra-Group transactions and good governance procedures; planning and coordinating, with other competent authorities, supervisory activities in respect of the Group, both as a going concern and in emergency situations; coordinating any enforcement action that may need to be taken against the Group or any of its members; and planning and coordinating meetings of colleges of supervisors (consisting of insurance regulators) in order to facilitate the carrying out of the functions described above.

In carrying out its functions, the BMA makes rules for assessing the financial situation and the solvency position of the Group and/or its members and regulating intra-Group transactions, risk concentration, governance procedures, risk management and regulatory reporting and disclosure.

Group Solvency and Group Supervision. The current supervision and solvency rules (together, “Group Rules”) apply to our Group so long as the BMA remains our Group supervisor. Through the Group Rules, the BMA may take action which affects ACGL. A summary of the Group Rules is set forth below.

- *Approved Group Actuary.* The Group is required to appoint an individual approved by the BMA to be the Group Actuary. The Group Actuary must provide an opinion on the Group’s technical provisions as recorded in the Group statutory economic balance sheet.
- *Annual Group Financial Statements.* The Group is required to prepare and submit, on an annual basis, financial statements prepared in accordance with either IFRS or GAAP, together with statutory financial statements. The financial statements must be audited annually by the Group’s approved auditor who is required to prepare an auditor’s report thereon in accordance with generally accepted auditing standards. The statutory financial statements include a balance sheet, an income statement, a statement of capital and surplus, and notes thereto. The Designated Insurer is required to file with the BMA the audited Group financial statements and the statutory financial statements with the BMA within five months from the end of the relevant financial year (unless specifically extended).
- *Annual Group Statutory Financial Return and Annual Group Capital and Solvency Return.* The Group is required to prepare an annual Group statutory financial return and an annual Group capital and solvency return. The annual Group capital and solvency return must include an annual opinion of the Group Actuary. Both the annual Group statutory financial return and the annual Group capital and solvency return must be submitted to the BMA by the Designated Insurer within five months after its financial year end (unless specifically extended).
- *Quarterly Group Financial Statements.* The Designated Insurer is required to file quarterly financial returns for the Group with the BMA on or before the last day of the months in May, August and November of each year.
- *Public Disclosures.* Pursuant to recent amendments to the Insurance Act, all Groups are required to prepare and file with the BMA, and also publish on their website, a financial condition report.
- *Group Solvency Self Assessment (“GSSA”).* The Group Rules require the board of directors of the parent company of the Group (the “Parent Board”) to establish solvency self assessment procedures that factor in all the foreseeable reasonably material risks. Such procedures should be carried out at least annually and assess the quality and quantity of the capital required to adequately cover the risks to which the Group is exposed. Such procedures must also be an integral part of the Group’s risk management framework and be reviewed and evaluated on a regular basis by the Parent Board. In particular, the GSSA should, among other things, demonstrate consideration of the relationship between risk management, the quality and quantity of capital resources, the impact of risk mitigation techniques and diversification and correlation effects between material risks; a description of the Group’s risk appetite; be forward-looking; include appropriate stress and scenario testing and appropriately reflect all assets and liabilities, material off-balance sheet arrangements, material intra group transactions, relevant managerial practices, systems and controls and a valuation basis that is aligned with the risk characteristics and business model of the Group.
- *Group Minimum Solvency Margin (“Group MSM”) and Group Enhanced Capital Requirement (“Group ECR”).*

The Group must ensure that the value of its total statutory Group capital and surplus exceeds the aggregate of (i) the amount of the aggregate minimum margins of solvency of each qualifying member of the Group controlled by the parent company, and (ii) the parent company's percentage shareholding in each member where it exercises significant influence over such member but does not control it, multiplied by the member's minimum solvency margin. A member is a qualifying member of the Group if it is subject to solvency requirements in the jurisdiction in which it is registered. Where the parent company exercises control in relation to any member of the group, the minimum margin of solvency of such member shall be its individual minimum solvency margin. Where the parent company exercises significant influence on any member of the Group, the minimum margin of solvency applicable to that member for purposes of calculating the Group MSM shall be an amount equal to the parent company's percentage shareholding in the member multiplied by that member's minimum margin of solvency. "Control" and "significant influence" shall be determined in accordance with either the IFRS or GAAP used to prepare the Group's IFRS or GAAP financial statements.

- *Group Eligible Capital.* To enable the BMA to better assess the quality of the group's capital resources, the Designated Insurer is required to disclose the makeup of the Group's capital in accordance with a 3-tiered eligible capital system. Under the eligible capital requirements, all of the Group's capital instruments are classified as either basic or ancillary capital which in turn are classified into one of 3 tiers based on their "loss absorbency" characteristics. Highest quality capital is classified as Tier 1 Capital, lesser quality capital is classified as either Tier 2 Capital or Tier 3 Capital. A minimum threshold of Tier 1 and maximum thresholds of Tier 2 and Tier 3 Capital are used to satisfy the Group MSM and Group ECR requirements are specified under the rules. Tier 1, Tier 2 and Tier 3 Capital may, until January 1, 2024, include capital instruments that do not satisfy the requirement that the instrument be non-redeemable or settled only with the issuance of an instrument of equal or higher quality upon a breach, or if redemption would cause a breach, of the Group ECR.
- *Group Governance.* The Group Rules require the Parent Board to establish and effectively implement corporate governance policies and procedures, which it must be periodically review to ensure they continue to support the overall organizational strategy of the group. In particular, the Parent Board must: ensure that operational and oversight responsibilities of the group are clearly defined and documented and that the reporting of material deficiencies and fraudulent activities are transparent and devoid of conflicts of interest; establish systems for identifying on a risk sensitive basis those policies and

procedures that must be reviewed annually and those policies and procedures that must be reviewed at other regular intervals; establish a risk management and internal controls framework and ensure that it is assessed regularly and such assessment is reported to the Parent Board and the chief and senior executives; establish and maintain sound accounting and financial reporting procedures and practices for the group; and establish and keep under review group functions relating to actuarial, compliance, internal audit and risk management functions which must address certain specific requirements as set out in the Group Rules.

BMA's Powers of Intervention, Obtaining Information, Reports and Documents and Providing Information to other Regulatory Authorities. If the BMA deems it necessary to protect the interests of the policyholders or potential policyholders of an insurer or insurance group, it may appoint one or more competent persons to investigate and report on the nature, conduct or state of the insurer's or the insurance group's business, or any aspect thereof, or the ownership or control of the insurer or insurance group. If the person so appointed thinks it necessary for the purposes of his investigation, he may also investigate the business of any person who is or has been at any relevant time, a member of the insurance group or of a partnership of which the person being investigated is a member. In this regard, it shall be the duty of every person who is or was a controller, officer, employee, agent, banker, auditor, accountant, barrister and attorney or insurance manager to produce to the person appointed such documentation as he may reasonably require for purposes of his investigation, and to attend and answer questions relevant to the investigation and to otherwise provide such assistance as may be necessary in connection therewith.

Certain Other Bermuda Law Considerations

ACGL and Arch Re Bermuda are incorporated in Bermuda as "exempted companies." As a result, they are exempt from Bermuda laws restricting the percentage of share capital that may be held by non-Bermudians, but they may not participate in certain business transactions, including: the acquisition or holding of land in Bermuda (except that required for their business and held by way of lease or tenancy for terms of not more than 50 years) without the express authorization of the Bermuda legislature; the taking of mortgages on land in Bermuda to secure an amount in excess of \$50,000 without the consent of the Minister of Finance; the acquisition of any bonds or debentures secured by any land in Bermuda, other than certain types of Bermuda government securities; or the carrying on of business of any kind in Bermuda, except in furtherance of their business carried on outside Bermuda or under license granted by the Minister of Finance. While an insurer is permitted to reinsure risks undertaken by any company incorporated in Bermuda and permitted to engage in the insurance and reinsurance business, generally it is not permitted without a special license granted by the Minister of Finance to

insure Bermuda domestic risks or risks of persons of, in or based in Bermuda.

ACGL and Arch Re Bermuda also need to comply with the provisions of The Bermuda Companies Act 1981, as amended (the “Companies Act”) regulating the payment of dividends and making distributions from contributed surplus. A company shall not declare or pay a dividend, or make a distribution out of contributed surplus, if there are reasonable grounds for believing that: the company is, or would after the payment be, unable to pay its liabilities as they become due; or the realizable value of the company’s assets would thereby be less than its liabilities. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations-Financial Condition, Liquidity and Capital Resources-Liquidity and Capital Resources” and note 23, “Statutory Information,” of the notes accompanying our financial statements.

Under Bermuda law, only persons who are Bermudians, spouses of Bermudians, holders of a permanent resident’s certificate, holders of a working resident’s certificate or persons who are exempt pursuant to the Incentives for Job Makers Act 2011, as amended (“exempted persons”) may engage in gainful occupation in Bermuda without an appropriate governmental work permit. Our success may depend in part upon the continued services of key employees in Bermuda. Certain of our current key employees are not exempted persons and, as such, require specific approval to work for us in Bermuda. A work permit may be granted or extended upon showing that, after proper public advertisement, no exempted person is available who meets the minimum standards reasonably required by the employer.

U.S. Insurance Regulation

General. In common with other insurers, our U.S. based subsidiaries are subject to extensive governmental regulation and supervision in the various states and jurisdictions in which they are domiciled and licensed and/or approved to conduct business. The laws and regulations of the state of domicile have the most significant impact on operations. This regulation and supervision is designed to protect policyholders rather than investors. Generally, regulatory authorities have broad regulatory powers over such matters as licenses, standards of solvency, premium rates, policy forms, marketing practices, claims practices, investments, security deposits, methods of accounting, form and content of financial statements, reserves and provisions for unearned premiums, unpaid losses and loss adjustment expenses, reinsurance, minimum capital and surplus requirements, dividends and other distributions to shareholders, periodic examinations and annual and other report filings. In addition, transactions among affiliates, including reinsurance agreements or arrangements, as well as certain third party transactions, require prior regulatory approval from, or prior notice to and no disapproval by, the applicable regulator under certain circumstances. Certain insurance regulatory

requirements are highlighted below. In addition, regulatory authorities conduct periodic financial, claims and market conduct examinations. Arch Insurance Company Europe is also subject to certain governmental regulation and supervision in the states where it writes excess and surplus lines insurance.

In addition to regulation applicable generally to U.S. insurance and reinsurance companies, our U.S. mortgage insurance operations are affected by federal and state regulation relating to mortgage insurers, mortgage lenders, and the origination, purchase and sale of residential mortgages. The private mortgage insurance industry is, and likely will continue to be, subject to substantial federal and state regulation, which has increased in recent years as a result of the past deterioration of the housing and mortgage markets in the U.S. Increased federal or state regulatory scrutiny could lead to new legal precedents, new regulations, new practices, or regulatory actions or investigations, which could adversely affect our financial condition and operating results.

Credit for Reinsurance. Arch Re U.S. is subject to insurance regulation and supervision that is similar to the regulation of licensed primary insurers. However, except for certain mandated provisions that must be included in order for a ceding company to obtain credit for reinsurance ceded, the terms and conditions of reinsurance agreements generally are not subject to regulation by any governmental authority. This contrasts with admitted primary insurance policies and agreements, the rates and terms of which generally are regulated by state insurance regulators. As a practical matter, however, the rates charged by primary insurers do have an effect on the rates that can be charged by reinsurers.

Certain provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the “Dodd-Frank Act”) provide that only the state in which a primary insurer is domiciled may regulate the financial statement credit for reinsurance taken by that primary insurer; other states will no longer be able to impose their own credit for reinsurance laws on primary insurers that are only licensed in such other states.

A primary insurer ordinarily will enter into a reinsurance agreement only if it can obtain credit for the reinsurance ceded on its U.S. statutory-basis financial statements. In general, credit for reinsurance is allowed in the following circumstances: if the reinsurer is licensed in the state in which the primary insurer is domiciled; if the reinsurer is an “accredited” or otherwise approved reinsurer in the state in which the primary insurer is domiciled; in some instances, if the reinsurer (a) is domiciled in a state that is deemed to have substantially similar credit for reinsurance standards as the state in which the primary insurer is domiciled and (b) meets certain financial requirements; or if none of the above applies, to the extent that the reinsurance obligations of the reinsurer are collateralized appropriately, typically through the posting of a letter of credit for the benefit of the primary insurer or the deposit of assets

into a trust fund established for the benefit of the primary insurer.

Some states have adopted provisions of the National Association of Insurance Commissioners (“NAIC”) amendments to its Credit for Reinsurance Model Law and Regulation (the “NAIC Credit for Reinsurance Model Act”) that allow full credit to U.S. ceding insurers for reinsurance ceded to qualified non-U.S. reinsurers (called “certified reinsurers”) based upon less than 100% collateralization. Under those provisions, collateral requirements may be reduced for international reinsurers meeting certain criteria as to financial strength and reliability that are domiciled in countries that are found to have strong systems of domestic insurance regulation. Applicants for “certified reinsurer” designation must agree to certain financial reporting, consent to jurisdiction and consent to provide collateral for the full amount of their assumed liabilities in specified circumstances. Arch Re Bermuda is approved in 27 states to post reduced collateral and is a designated as a “certified reinsurer” in other U.S. states.

As a result of the requirements relating to the provision of credit for reinsurance, Arch Re U.S. and Arch Re Bermuda are indirectly subject to certain regulatory requirements imposed by jurisdictions in which ceding companies are domiciled.

Arch Re U.S. is licensed or is an accredited or otherwise approved reinsurer in 50 states and the District of Columbia and the provinces of Ontario and Quebec in Canada. Arch Re U.S. is also an admitted insurer in Guam. Neither Arch Re Bermuda nor Arch Re Europe expects to become licensed, accredited or so approved in any U.S. jurisdiction.

Holding Company Acts. All states have enacted legislation that regulates insurance holding company systems. These regulations generally provide that each insurance company in the system is required to register with the insurance department of its state of domicile and furnish information concerning the operations of companies within the holding company system which may materially affect the operations, management or financial condition of the insurers within the system. All transactions within a holding company system affecting insurers must be fair and reasonable. Notice to the state insurance departments is required prior to the consummation of certain material transactions between an insurer and any entity in its holding company system. In addition, certain of such transactions cannot be consummated without the applicable insurance department’s prior approval, or its failure to disapprove after receiving notice. The holding company acts also prohibit any person from directly or indirectly acquiring control of a U.S. insurance or reinsurance company unless that person has filed an application with specified information with such company’s domiciliary commissioner and has obtained the commissioner’s prior approval. Under most states’ statutes, including Delaware, Wisconsin, North Carolina and Missouri (the states of domicile of Arch’s U.S. insurance and reinsurance

subsidiaries), acquiring 10% or more of the voting securities of an insurance company or its parent company is presumptively considered an acquisition of control of the insurance company, although such presumption may be rebutted. Accordingly, any person or entity that acquires, directly or indirectly, 10% or more of the voting securities of ACGL without the prior approval of the commissioner will be in violation of these laws and may be subject to injunctive action requiring the disposition or seizure of those securities by the commissioner or prohibiting the voting of those securities, or to other actions that may be taken by the commissioner. In 2010, the NAIC adopted amendments to the Insurance Holding Company System Regulatory Act and Regulation, which, among other changes, introduce the concept of “enterprise risk” within an insurance holding company system. When the amendments are adopted by a particular state, the amended Insurance Holding Company System Regulatory Act and Regulation impose more extensive informational requirements on parents and other affiliates of licensed insurers or reinsurers with the purpose of protecting them from enterprise risk, including requiring an annual enterprise risk report by the ultimate controlling person identifying the material risks within the insurance holding company system that could pose enterprise risk to the licensed companies. The amended Insurance Holding Company System Regulatory Act also requires any controlling person of a U.S. insurance company seeking to divest its controlling interest in the insurance company to file with the commissioner a confidential notice of the proposed divestiture at least 30 days prior to the cessation of control; after receipt of the notice, the commissioner shall determine those instances in which the parties seeking to divest or to acquire a controlling interest will be required to file for or obtain approval of the transaction. The amended Insurance Holding Company System Regulatory Act and Regulation must be adopted by the individual states for the new requirements to apply to U.S. domestic insurers and reinsurers. The NAIC reports that, to date, every state and the District of Columbia has enacted legislation adopting the amended Insurance Holding Company System Regulatory Act in some form.

Enterprise Risk. The NAIC has increased its focus on risks within an insurer’s holding company system that may pose enterprise risk to the insurer. “Enterprise risk” is defined as any activity, circumstance, event or series of events involving one or more affiliates of an insurer that, if not remedied promptly, is likely to have a material adverse effect upon the financial condition or the liquidity of the insurer or its insurance holding company system as a whole. As noted above, in 2010, the NAIC adopted amendments to its Model Insurance Holding Company System Regulatory Act and Regulation, which include, among other amendments, a requirement for the ultimate controlling person to file an enterprise risk report annually. In 2012, the NAIC adopted the Risk Management and Own Risk and Solvency Assessment (“ORSA”) Model Act, which requires domestic insurers to maintain a risk management framework

and establishes a legal requirement for domestic insurers to conduct an ORSA in accordance with the NAIC's ORSA Guidance Manual. The ORSA Model Act provides that domestic insurers, or their insurance group, must regularly conduct an ORSA consistent with a process comparable to the ORSA Guidance Manual process. The ORSA Model Act also provides that, no more than once a year, an insurer's domiciliary regulator may request that an insurer submit an ORSA summary report, or any combination of reports that together contain the information described in the ORSA Guidance Manual, with respect to the insurer and/or the insurance group of which it is a member. If and when the ORSA Model Act is adopted by an individual state, the state may impose additional internal review and regulatory filing requirements on licensed insurers and their parent companies.

Regulation of Dividends and Other Payments from Insurance Subsidiaries. The ability of an insurer to pay dividends or make other distributions is subject to insurance regulatory limitations of the insurance company's state of domicile. Generally, such laws limit the payment of dividends or other distributions above a specified level. Dividends or other distributions in excess of such thresholds are "extraordinary" and are subject to prior regulatory approval. Such dividends or distributions may be subject to applicable withholding or other taxes. See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Financial Condition, Liquidity and Capital Resources-Liquidity and Capital Resources" and note 23, "Statutory Information," of the notes accompanying our financial statements.

Insurance Regulatory Information System Ratios. The NAIC Insurance Regulatory Information System ("IRIS") was developed by a committee of state insurance regulators and is intended primarily to assist state insurance departments in executing their statutory mandates to oversee the financial condition of insurance companies operating in their respective states. IRIS identifies 13 industry ratios (referred to as "IRIS ratios") and specifies "usual values" for each ratio. Departure from the usual values of the IRIS ratios can lead to inquiries from individual state insurance commissioners as to certain aspects of an insurer's business. Certain of our U.S.-based subsidiaries generate IRIS ratios that are outside of the usual values. To date, none of these subsidiaries has received any notice of regulatory review regarding the IRIS ratios but there is no assurance that we may not be notified in the future.

Accreditation. The NAIC has instituted its Financial Regulation Accreditation Standards Program ("FRASP") in response to federal initiatives to regulate the business of insurance. FRASP provides a set of standards designed to establish effective state regulation of the financial condition of insurance companies. Under FRASP, a state must adopt certain laws and regulations, institute required regulatory practices and procedures, and have adequate personnel to enforce such items in order to become an "accredited" state. If a state is not accredited, other states

may not accept certain financial examination reports of insurers prepared solely by the regulatory agency in such unaccredited state. The respective states in which our insurance and reinsurance subsidiaries are domiciled are accredited states.

Risk-Based Capital Requirements. In order to enhance the regulation of insurer solvency, the NAIC adopted in December 1993 a formula and model law to implement risk-based capital requirements for property and casualty insurance companies. These risk-based capital requirements are designed to assess capital adequacy and to raise the level of protection that statutory surplus provides for policyholder obligations. The risk-based capital model for property and casualty insurance companies measures three major areas of risk facing property and casualty insurers: underwriting, which encompasses the risk of adverse loss developments and inadequate pricing; declines in asset values arising from credit risk; and declines in asset values arising from investment risks.

An insurer will be subject to varying degrees of regulatory action depending on how its statutory surplus compares to its risk-based capital calculation. For equity investments in an insurance company affiliate, the risk-based capital requirements for the equity securities of such affiliate would generally be our U.S.-based subsidiaries' proportionate share of the affiliate's risk-based capital requirement.

Under the approved formula, an insurer's total adjusted capital is compared to its authorized control level risk-based capital. If this ratio is above a minimum threshold, no company or regulatory action is necessary. Below this threshold are four distinct action levels at which a regulator can intervene with increasing degrees of authority over an insurer as the ratio of surplus to risk-based capital requirement decreases. The four action levels include: insurer is required to submit a plan for corrective action; insurer is subject to examination, analysis and specific corrective action; regulators may place insurer under regulatory control; and regulators are required to place insurer under regulatory control.

Mortgage guaranty insurance is currently not subject to state risk-based capital requirements, but rather is subject to state risk to capital or minimum policyholder position requirements. The NAIC has established a Mortgage Guaranty Insurance Working Group which is engaged in developing changes to the Mortgage Guaranty Insurers Model Act, including the development of a risk based capital model unique to mortgage guaranty insurers.

Each of our non-mortgage insurer U.S. subsidiaries' surplus (as calculated for statutory purposes) is above the risk-based capital thresholds that would require either company or regulatory action.

Guaranty Funds and Assigned Risk Plans. Most states require all admitted insurance companies to participate in their

respective guaranty funds which cover certain claims against insolvent insurers. Solvent insurers licensed in these states are required to cover the losses paid on behalf of insolvent insurers by the guaranty funds and are generally subject to annual assessments in the states by the guaranty funds to cover these losses. Participation in state-assigned risk plans may take the form of reinsuring a portion of a pool of policies or the direct issuance of policies to insureds. The calculation of an insurer's participation in these plans is usually based on the amount of premium for that type of coverage that was written by the insurer on a voluntary basis. Assigned risk pools tend to produce losses which result in assessments to insurers writing the same lines on a voluntary basis. Mortgage guaranty insurance, among other lines of business, is typically exempt from participation in guaranty funds and assigned risk plans.

Federal Regulation. Although state regulation is the dominant form of regulation for insurance and reinsurance business, the federal government in recent years has shown some concern over the adequacy of state regulation. It is not possible to predict the future impact of any potential federal regulations or other possible laws or regulations on our U.S. based subsidiaries' capital and operations, and such laws or regulations could materially adversely affect our business. In addition, a number of federal laws affect and apply to the insurance industry, including various privacy laws and the economic and trade sanctions implemented by the Office of Foreign Assets Control ("OFAC"). OFAC maintains and enforces economic sanctions against certain foreign countries and groups and prohibits U.S. persons from engaging in certain transactions with certain persons or entities. OFAC has imposed civil penalties on persons, including insurance and reinsurance companies, arising from violations of its economic sanctions program.

Certain federal laws directly or indirectly impact mortgage insurers, including the Real Estate Settlement Procedures Act of 1974 ("RESPA"), the Homeowners Protection Act of 1998 ("HOPA"), the Equal Credit Opportunity Act, the Fair Housing Act, the Truth In Lending Act ("TILA"), the Fair Credit Reporting Act of 1970 ("FCRA"), and the Fair Debt Collection Practices Act. Among other things, these laws and their implementing regulations prohibit payments for referrals of settlement service business, require fairness and non-discrimination in granting or facilitating the granting of credit, govern the circumstances under which companies may obtain and use consumer credit information, define the manner in which companies may pursue collection activities, and require disclosures of the cost of credit and provide for other consumer protections.

The Dodd-Frank Wall Street Reform and Consumer Protection Act. The Dodd-Frank Act created the Federal Insurance Office ("FIO") within the Department of Treasury, which is not a federal regulator or supervisor of insurance, but monitors the insurance industry for systemic risk, administers the Terrorism Risk Insurance Program Reauthorization Act of 2015

("TRIPRA"), consults with the states regarding insurance matters and develops federal policy on aspects of international insurance matters. In addition, FIO is authorized to assist the Treasury Secretary in negotiating "covered agreements" between the U.S. and one or more foreign governments or regulatory authorities that address insurance prudential measures. Where a state law is inconsistent with a "covered agreement" and provides less favorable treatment to foreign insurers than U.S. companies, the FIO Director may preempt conflicting state law. On January 13, 2017, the U.S. Secretary of the Treasury and the U.S. Trade Representative notified Congress that they reached agreement with the European Union on a covered agreement that addresses reinsurance, group supervision, and the exchange of information between supervisory authorities in the United States and the European Union. Notably, with respect to reinsurance, subject to certain conditions, the U.S.-EU covered agreement would eliminate collateral and local presence requirements for qualified U.S. reinsurers operating in the EU insurance market, and eliminate collateral and local presence requirements for qualified EU reinsurers operating in the U.S. insurance market, as a condition for and in connection with regulatory credit for reinsurance. With respect to group supervision, the U.S.-EU covered agreement provides that U.S. insurance groups operating in the EU will be supervised at the worldwide group level only by the relevant U.S. insurance supervisors, and that EU insurers operating in the U.S. will be supervised at the worldwide group level only by the relevant EU insurance supervisors. The U.S.-EU covered agreement is not applicable to non-U.S. and non-E.U. countries such as Bermuda.

In 2013, the FIO issued two reports relating to the insurance industry, one on modernization of the insurance regulatory system and one on the impact of Part II of the Nonadmitted and Reinsurance Reform Act of 2010. In its December 2013 report on modernization of the insurance regulatory system, and again in its September 2015 Annual Report on the Insurance Industry, the FIO recommended the development of federal standards and oversight for mortgage insurers. In December 2014, the FIO issued a report on the vital role that the global reinsurance market plays in supporting insurance in the United States. The impact that these reports will have on the regulation of insurance, if any, is yet to be determined. The Dodd-Frank Act also created a uniform system for non-admitted insurance premium tax payments based on the home state of the policyholder and provides for single state regulation for financial solvency and credit for reinsurance as discussed above.

The Dodd-Frank Act established the Consumer Financial Protection Bureau ("CFPB") to regulate the offering and provision of consumer financial products and services under federal law, including residential mortgages. Pursuant to the Dodd-Frank Act, the CFPB is charged with rulemaking and enforcement with respect to enumerated consumer laws,

including RESPA, TILA, HOPA, the Secure and Fair Enforcement for Mortgage Licensing Act ("SAFE Act") and FCRA. The Dodd-Frank Act also granted to the CFPB certain supervisory powers with respect to "covered persons" and "service providers," as defined by the Act.

In 2014, the CFPB issued final regulations governing a loan originator's determination that, at the time a loan is originated, the consumer has a reasonable ability to repay the loan ("ATR"). The Dodd-Frank Act provides for a statutory presumption that a borrower will have the ability to repay a loan if the loan has characteristics satisfying the definition of a qualified mortgage ("QM") contained in the CFPB's regulations. Under the CFPB's ATR regulations, a loan is deemed to be a QM loan if it meets certain requirements, including: a 30 year term or less; no negative amortization, interest only or balloon features; the total "points and fees" do not exceed certain thresholds, generally 3%; and the borrower's total debt-to-income ratio does not exceed 43%.

The QM definition provides a "safe harbor" for QM loans with annual percentage rates, or APRs, below the threshold of 150 basis points over the Average Prime Offer Rate and a "rebuttable presumption" of compliance with ATR requirements for QM loans with an APR above that threshold.

Under the ATR regulations, any loan that is eligible for purchase, guarantee, or insurance by a GSE, FHA, VA, Department of Agriculture, or the Rural Housing Service is deemed to be a QM loan. This QM category applies to GSE loans as long as the GSEs are in FHFA conservatorship and for federal agency loans until an agency issues its own QM rules, or January 10, 2021, whichever occurs first. The FHFA has directed the GSEs to limit purchases to loans that meet QM requirements, with the exception of the 43% borrower total debt-to-income ratio limitation. To the extent that government agencies adopt their own definitions of a qualified mortgage and those definitions are more favorable to lenders than those applicable to the market in which private mortgage insurers participate, our business may be adversely affected.

Because of the QM evidentiary standard that gives presumption of compliance, we believe that most newly-originated mortgages are QMs. Our operating results could be adversely impacted if the QM regulations reduce the size of the origination market, reduce the willingness of lenders to extend low down payment credit, favor alternatives to private mortgage insurance such as government mortgage insurance programs, or change the mix of mortgage insurance business in ways that may be unfavorable to us.

The Dodd-Frank Act generally requires an issuer of an asset-backed security or initiator of an asset-backed transaction (a "securitizer") to retain at least 5% of the risk associated with securitized mortgage loans. This requirement does not apply to lenders that originate loans that are sold to the GSEs while they

are in conservatorship, to qualified residential mortgages ("QRM"), or to loans insured or guaranteed by FHA or certain other federal agencies. In October 2014, federal regulators issued risk-retention rules generally defining a QRM as a mortgage meeting the requirements of a QM loan. As the risk retention rules treat all QM loans as QRMs, low down payment loans with private mortgage insurance that do not meet the requirements of the QM rule can only be securitized with a risk retention requirement, which may deter their origination and adversely affect our business.

U.S. President Trump issued an executive order to review streamlining the Dodd-Frank Act and the regulations thereunder. While it is unclear whether the U.S. Congress will fully repeal the Dodd-Frank Act, it is possible that portions of the Dodd-Frank Act and its regulations, including the agencies and regulations discussed above may be eliminated or amended.

The Homeowners Protection Act of 1998. HOPA provides for the automatic termination, or cancellation upon a borrower's request, of private mortgage insurance upon satisfaction of certain conditions and requires that lenders give borrowers certain disclosures with regard to these provisions at the time the loan is originated. These provisions apply to borrower-paid mortgage insurance for purchase money, refinance and construction loans secured by the borrower's principal dwelling. FHA and VA loans are not covered by HOPA. Under HOPA, automatic termination of mortgage insurance generally occurs when the mortgage is first scheduled to reach a loan-to-value of 78% of the home's original value, assuming that the borrower is current on the required mortgage payments. A borrower who has a "good payment history," as defined by HOPA, may generally request cancellation of mortgage insurance when the loan-to-value is first scheduled to reach 80% of the home's original value or when actual payments reduce the loan balance to 80% of the home's original value. In August 2015, the CFPB issued a compliance bulletin summarizing HOPA's mortgage insurance cancellation and termination requirements and advising that in prior supervisory examinations the CFPB identified violations by mortgage loan servicers of certain provisions of HOPA, including termination and cancellation requirements.

Real Estate Settlement Procedures Act of 1974. Subject to limited exceptions, RESPA prohibits persons from giving or accepting anything of value in connection with the referral of a settlement service. Mortgage insurance generally has been considered to be a "settlement service" for purposes of RESPA. RESPA authorizes the CFPB, the Department of Justice, state attorneys general and state insurance commissioners to bring civil enforcement actions, and also provides for criminal penalties and private rights of action. In the past, a number of lawsuits have challenged the actions of private mortgage insurers, including United Guaranty Residential Insurance Company, under RESPA, alleging that the insurers violated the referral fee prohibition by entering into captive reinsurance

arrangements or providing products or services to mortgage lenders at improperly reduced prices in return for the referral of mortgage insurance, including the provision of contract underwriting services. In addition to these private lawsuits, the CFPB and the Minnesota Department of Commerce conducted industry-wide examinations regarding captive reinsurance practices by lenders and mortgage insurance companies to determine whether such arrangements violated the RESPA referral fee prohibition. In 2013, United Guaranty and several other mortgage insurers, settled with the CFPB and consented to discontinue captive reinsurance practices, and in 2015, we entered into a consent order with the Minnesota Commissioner of Commerce pursuant to which we again agreed to discontinue captive reinsurance practices.

In June 2015, the Director of the CFPB issued a decision in a contested CFPB administrative proceeding, *In re PHH Corp.* The Director of the CFPB affirmed an administrative law judge's conclusion that PHH Corp. had violated RESPA in connection with its captive reinsurance arrangements with mortgage insurers (including AMIC's predecessor, CMG Mortgage Insurance Company). The Director of the CFPB ordered PHH to pay \$109 million in disgorgement, rather than the \$6 million recommended by the administrative law judge. The Director of the CFPB's decision sets forth the CFPB's current views on numerous RESPA interpretation issues and takes expansive views of what constitutes a RESPA violation and how to calculate disgorgement under the statute. PHH appealed and on October 11, 2016, a three judge panel of the D.C. Circuit Court of Appeals issued its ruling which held that, as structured, the federal agency is unconstitutional because the U.S. President can only remove the Director for cause and that the CFPB's application of RESPA was erroneous on a number of points. The CFPB petitioned the D.C. Court of Appeals for an *en banc* rehearing. The petition was granted on February 16, 2017. Oral argument before the *en banc* court is scheduled for May 24, 2017.

TILA-RESPA Integrated Disclosure ("TRID") Rule. In November 2013, the CFPB issued a final rule amending the TILA and RESPA regulations (Regulations Z and X, respectively) to integrate several required notices and disclosures to mortgage loans applicants. In July 2015, the CFPB issued an amended final rule establishing October 3, 2015 as the effective date for implementation of the new forms and the associated rules. Thereafter, in July 2016, the CFPB proposed certain technical amendments to the TRID rule. The TRID rule consolidated four existing disclosures required by TILA and RESPA, the appraisal notice required by the Equal Credit Opportunity Act, and the servicing notice required by RESPA into two forms: a Loan Estimate that must be delivered or placed in the mail no later than the third business day after receiving the consumer's application, and a Closing Disclosure that must be provided to the consumer at least three business days prior to loan consummation. Mortgage insurers do not have any obligations to provide notices or disclosures to loan

applicants under the TRID rule. Following the October 3, 2015 effective date, mortgage loan originators implemented the new disclosures, including, in some instances, the proper way to disclose mortgage insurance premiums on the new forms.

Secure and Fair Enforcement for Mortgage Licensing Act. The SAFE Act was enacted in 2008 to enhance consumer protection and reduce fraud by encouraging states to establish minimum standards for the licensing and registration of state-licensed mortgage loan originators. The SAFE Act also requires the establishment of a nationwide mortgage licensing system and registry for the residential mortgage industry. Administration and enforcement of the SAFE Act lies with the CFPB. Two of our subsidiaries, Arch Fulfillment Operations Inc. ("AFOI") and United Guaranty Services, Inc., are engaged in the business of providing contract underwriting services to residential lenders and have obtained certain mortgage lender licenses in order to comply with state specific SAFE Act requirements.

Fair Credit Reporting Act. FCRA imposes restrictions on the permissible use of credit report information. FCRA has been interpreted by the Federal Trade Commission ("FTC") staff and federal courts to require mortgage insurance companies to provide "adverse action" notices to consumers in the event an application for mortgage insurance is declined or offered at a premium rate higher than what would have been applied had the rate not been based in whole or in part on the consumer's credit report. Arch MI U.S. provides such notices. There has been class action litigation over FCRA adverse action notices involving the mortgage industry, including court-approved settlements.

Terrorism Risk Insurance Program Reauthorization Act of 2015. The Terrorism Risk Insurance Act of 2002 was amended and extended again by TRIPRA through December 31, 2020. TRIPRA provides a federal backstop for insurance related losses resulting from certain acts of terrorism on U.S. soil or against certain U.S. air carriers, vessels or foreign missions. Under TRIPRA, all U.S. based property and casualty insurers are required to make terrorism insurance coverage available in specified commercial property and casualty insurance lines. Under TRIPRA, the federal government will pay 85% of covered losses after (i) aggregate industry insured losses resulting from the act of terrorism exceeds a statutorily prescribed program trigger, and (ii) an insurer's losses exceed a deductible determined by a statutorily prescribed formula, up to a combined annual aggregate limit for the federal government and all insurers of \$100 billion. The program trigger for calendar year 2017 is \$140 million and will increase by \$20 million per year until it becomes \$200 million in 2020. The federal share for the calendar year 2017 is 83% and will decrease by 1% per year until it becomes 80% in 2020. If an act (or acts) of terrorism result in covered losses exceeding the \$100 billion annual limit, insurers with losses exceeding their deductibles will not be responsible for additional losses. An insurer's deductible for each year is based on the insurer's (together with those of its

affiliates) direct commercial earned premiums for property and casualty insurance, excluding certain lines of business such as commercial auto, surety, professional liability and earthquake lines of business, for the prior calendar year multiplied by a specified percentage. The specified percentage through 2020 is 20%.

Our U.S.-based property and casualty insurers, Arch Insurance, Arch Specialty, Arch E&S and Arch Indemnity, are subject to TRIPRA. TRIPRA specifically excludes reinsurance business and, accordingly, does not apply to our reinsurance operations. Our insurance group's deductible for 2016 was approximately \$322.5 million (*i.e.*, 20.0% of direct earned premiums). Based on 2016 direct commercial earned premiums, our insurance group's deductible for 2017 will be approximately \$345.1 million (*i.e.*, 20.0% of such direct earned premiums).

The Gramm-Leach-Bliley Act. The Gramm-Leach-Bliley Act of 1999 ("GLBA"), which implements fundamental changes in the regulation of the financial services industry in the United States, was enacted on November 12, 1999. The GLBA permits mergers that combine commercial banks, insurers and securities firms under one holding company, a "financial holding company." Bank holding companies and other entities that qualify and elect to be treated as financial holding companies may engage in activities, and acquire companies engaged in activities, that are "financial" in nature or "incidental" or "complementary" to such financial activities. Such financial activities include acting as principal, agent or broker in the underwriting and sale of life, property, casualty and other forms of insurance and annuities.

Until the passage of the GLBA, the Glass-Steagall Act of 1933 had limited the ability of banks to engage in securities-related businesses, and the Bank Holding Company Act of 1956 had restricted banks from being affiliated with insurers. Since passage of the GLBA, among other things, bank holding companies may acquire insurers, and insurance holding companies may acquire banks. The ability of banks to affiliate with insurers may affect our U.S. subsidiaries' product lines by substantially increasing the number, size and financial strength of potential competitors.

The GLBA also imposes privacy requirements on financial institutions, including obligations to protect and safeguard consumers' nonpublic personal information and records, and limitations on the re-use of such information. Federal regulatory agencies have issued Interagency Guidelines Establishing Information Security Standards, or "Security Guidelines," and interagency regulations regarding financial privacy, or "Privacy Rule," implementing sections of GLBA. The Security Guidelines establish standards relating to administrative, technical, and physical safeguards to ensure the security, confidentiality, integrity, and the proper disposal of consumer information. The Privacy Rule limits a financial institution's disclosure of nonpublic personal information to unaffiliated

third parties unless certain notice requirements are met and the consumer does not elect to prevent or "opt out" of the disclosure. The Privacy Rule also requires that privacy notices provided to customers and consumers describe the financial institutions' policies and practices to protect the confidentiality and security of the information. Many states have enacted legislation implementing GLBA and establishing information security regulation. Many states have enacted privacy and data security laws which impose compliance obligations beyond GLBA, including obligations to protect social security numbers and provide notification in the event that a security breach results in a reasonable belief that unauthorized persons may have obtained access to consumer nonpublic information.

GSE Eligible Mortgage Insurer Requirements. As the most significant purchasers and sellers of conventional mortgage loans and, therefore, beneficiaries of private mortgage insurance, the GSEs impose requirements on private mortgage insurers, so that they may be eligible to insure loans sold to the GSEs. Effective December 31, 2015, the GSEs published comprehensive, revised requirements, known as the Private Mortgage Insurer Eligibility Requirements or "PMIERs." As clarified and revised by the Guidance Letters issued by the GSEs in December 2016, the PMIERs apply to our eligible mortgage insurers, but do not apply to Arch Mortgage Guaranty Company, which is not GSE-approved. The PMIERs impose limitations on the type of risk insured, the forms and insurance policies issued, standards for the geographic and customer diversification of risk, procedures for claims handling, acceptable underwriting practices, standards for certain reinsurance cessions and financial requirements, among other things. The financial requirements require an eligible mortgage insurer's available assets, which generally include only the most liquid assets of an insurer, to meet or exceed "minimum required assets" as of each quarter end. Minimum required assets are calculated from PMIERs tables with several risk dimensions (including origination year, original loan-to-value and original credit score of performing loans, and the delinquency status of non-performing loans) and are subject to a minimum amount.

The amount of assets required to satisfy the revised financial requirements of the PMIERs at any point in time will be affected by many factors, including macro-economic conditions, the size and composition of our eligible mortgage insurers' mortgage insurance portfolio at the point in time, and the amount of risk ceded to reinsurers that may be deducted in our calculation of "minimum required assets." Our eligible mortgage insurers satisfied the PMIERs' financial requirements as of December 31, 2016.

Under the PMIERs, AMIC was deemed to be a "newly-approved insurer." As a result of this status, until January 2017, AMIC was subject to additional PMIER requirements, including restrictions on dividends to affiliates or making any investment, contribution or loan to any affiliate. Since January

2017, none of our eligible mortgage insurers are classified as a “newly-approved insurer” under PMIERS.

In conjunction with the acquisition of UGC and the related approval of the change of control by the GSEs, the GSEs imposed additional requirements on our eligible mortgage insurers, including maintaining capital in excess of PMIERS requirements on a consolidated basis and requiring notifications relating to certain integration activities.

State Insurance Regulation of Mortgage Insurers. The operating insurance subsidiaries of Arch MI U.S. are subject to detailed regulation by its domiciliary and primary regulators, the Wisconsin Office of the Commissioner of Insurance (“Wisconsin OCI”) for AMIC and Arch Mortgage Guaranty Company, and the North Carolina Department of Insurance (“NC DOI”) for United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company, and by state insurance departments in each state in which they are licensed. As mandated by state insurance laws, mortgage insurers are generally mono-line companies restricted to writing a single type of insurance business, such as mortgage insurance business. Each company is subject to either Wisconsin or North Carolina statutory requirements as to payment of dividends. The maximum amount of “ordinary dividends” that the Wisconsin subsidiaries may pay in any 12-month period without regulatory approval by the Wisconsin OCI is the lesser of adjusted statutory net income or 10% of statutory policyholders’ surplus as of the preceding calendar year end. Adjusted statutory net income is defined for this purpose to be the greater of: (i) net income for the calendar year preceding the date of the dividend, minus realized capital gains for that calendar year; or (ii) aggregate net income for the 3 calendar years preceding the date of the dividend, less realized capital gains for those calendar years and less dividends paid or credited and distributions made within the first 2 of the preceding 3 calendar years. Under North Carolina’s insurance laws, a North Carolina domiciled insurer may pay “ordinary dividends” without prior approval of the NC DOI when the total of all other dividends declared or distributed by it during the preceding 12 months does not exceed the greater of (1) 10% of its surplus as regards policyholders as of the preceding December 31, or (2) the net income (not including realized capital gains) for the 12-month period ending the preceding December 31. North Carolina’s insurance laws also require that ordinary dividends be paid out of positive unassigned surplus.

Generally, both Wisconsin and North Carolina law precludes any dividend before giving at least 30 days’ notice to the Wisconsin OCI or NC DOI, as applicable, and prohibits paying any dividend unless it is fair and reasonable to do so. In addition, the GSEs and other states limit or restrict Arch MI U.S.’s ability to pay stockholder dividends or otherwise return capital to shareholders.

Mortgage insurance companies licensed in Wisconsin or North Carolina are required to establish contingency loss reserves for purposes of statutory accounting in an amount equal to at least 50% of net earned premiums. These amounts generally cannot be withdrawn for a period of 10 years and are charged directly to unassigned statutory surplus, which affects the ability to pay dividends. However, with prior regulatory approval, a mortgage insurance company may make early withdrawals from the contingency reserve when incurred losses exceed 35% of net premiums earned in a calendar year.

Under Wisconsin and North Carolina law, as well as that of 14 other states, a mortgage insurer must maintain a minimum amount of statutory capital relative to its risk in force in order for the mortgage insurer to continue to write new business. While formulations of minimum capital vary in certain jurisdictions, the most common measure applied allows for a maximum risk-to-capital ratio of 25 to 1. Wisconsin and North Carolina both require a mortgage insurer to maintain a “minimum policyholder position” calculated in accordance with their respective regulations. Policyholders’ position consists primarily of statutory policyholders’ surplus plus the statutory contingency reserve, less ceded reinsurance. While the statutory contingency reserve is reported as a liability on the statutory balance sheet, for risk-to-capital ratio calculations, it is included as capital for purposes of statutory capital.

The NAIC has established a working group to make recommendations to the NAIC’s Financial Condition Committee regarding changes to the NAIC’s Mortgage Guaranty Insurance Model Act. The NAIC working group has released several drafts that include proposed changes to minimum statutory capital requirements. If the NAIC revises the Mortgage Guaranty Insurance Model Act, some state legislatures are likely to enact and implement part or all of the revised provisions.

Mortgage insurance premium rates are also subject to review and approval by state regulators. Any increase or decrease in premium rates must be justified, generally on the basis of the insurer’s loss and default experience, expenses and future trend analysis. Arch MI U.S. has approved premium rates for credit union and mortgage banking originated mortgage loans in all 50 states.

Legislative and Regulatory Proposals. From time to time various regulatory and legislative changes have been proposed in the insurance and reinsurance industry. Among the proposals that have been considered are the possible introduction of federal regulation in addition to, or in lieu of, the current system of state regulation of insurers and the NAIC. In addition, there are a variety of proposals being considered by various state legislatures. One ongoing area of work at the NAIC is consideration of group capital standards.

Since the GSEs were placed into the conservatorship of FHFA in 2008, there has been debate regarding the roles of the GSEs, the federal government and private capital in the U.S. housing finance system. The federal government currently plays a dominant role in the U.S. housing finance system through the GSEs and the FHA, VA and Ginnie Mae. There is broad policy consensus on the need for private capital to play a larger role and government credit risk to be reduced. However, to date there has been a lack of consensus with regard to the specific changes necessary to return a larger role for private capital and reduce the role of government. The size, complexity and centrality of the GSEs to the current housing finance system and the importance of housing to the economy make the transition to any new housing finance system difficult.

GSE and secondary market reform proposals put forward since 2008 include the nearly complete privatization and elimination of the role of the GSEs, recapitalization of the GSEs, and a number of alternatives that combine a federal role with private capital, some of which eliminate the GSEs and others of which envision an on-going role for the GSEs. In 2011, the U.S. Department of the Treasury released a proposal to reform the U.S. housing finance market that included the substantial reduction of government's footprint in housing finance. In 2013, the Obama administration issued a set of core principles for housing finance reform that was intended to ensure widespread access to 30-year fixed rate mortgages while phasing out the role of the GSEs in the housing finance system. In January 2015, the Obama administration called for Congress to "wind down" the GSEs.

Several reform proposals have been considered by Congress. In 2013, the House Financial Services Committee passed H.R. 2767, "The Protecting American Taxpayers and Homeowners Act of 2013" (the "PATH Act"), a comprehensive secondary market reform plan that included a very limited risk-bearing role for government and the winding down of the GSEs. In 2014, the Senate Banking Committee passed S. 1217, "The Housing Finance Reform and Taxpayer Protection Act of 2014" (the "Reform Bill"). The Reform Bill would have created a general structure for comprehensive reform and transition, including the wind down of the GSEs and the creation of a new entity, the Federal Mortgage Insurance Corporation, or "FMIC." Under the Reform Bill, private investors in single-family covered securities would have been required to hold a 10% first loss position before FMIC, in exchange for a fee, would insure the payment of principal and interest on the covered securities. While the bill explicitly provided a role for mortgage insurance on low down-payment loans, it did not recognize the loss protection provided by mortgage insurance toward the 10% first loss requirement.

In 2016, neither Congress nor the Obama administration took comprehensive action with respect to GSE reform. It is unclear to what extent the Trump administration will pursue GSE reform. Accordingly, the prospects for passage of housing

finance and GSE reform legislation remain uncertain. New federal legislation could reduce the level of private mortgage insurance coverage used by the GSEs as credit enhancement, eliminate the GSE charter requirement altogether or otherwise alter or eliminate the role of the GSEs, and thereby materially impact Arch MI U.S.'s ability to compete, demand for its products, and its financial condition.

As the regulator and conservator of the GSEs, FHFA has the authority to establish the priorities of the GSEs and to control and direct their operations. FHFA has made changes to the business and operations of the GSEs, in part under the direction of annual FHFA-developed strategic plans or scorecards for the conservatorship of the GSEs. The 2016 strategic plan called for the contraction of the role of the GSEs and expansion of the role of private capital through a number of actions, including shrinking the portfolios of the GSEs and the expanded use of credit risk sharing with private market participants. FHFA's 2017 scorecard continues these priorities.

Arch MI U.S. competes with the single-family mortgage insurance programs of FHA, which is part of HUD. In January 2015, FHA reduced the annual mortgage insurance premium it charges from 1.35% of the loan amount to 0.85%. This premium reduction made private mortgage insurance less competitive with the FHA for borrowers with certain credit characteristics. In January 2017, FHA announced another premium reduction that would impact most borrowers. However, the new HUD commissioner indefinitely suspended this reduction pending further analysis. Further reductions will make private mortgage insurers less competitive with respect to certain borrowers. In July 2013, the House Financial Services Committee passed the PATH Act, which contained extensive reforms to FHA, and the Senate Banking Committee passed "The FHA Solvency Act of 2013." Despite areas of similarity, there were significant differences between the House and Senate proposed reforms. The prospects for passage of FHA reform legislation are uncertain. If FHA reform were to raise FHA premiums, tighten FHA credit guidelines, make other changes which make lender use of the FHA less attractive, or implement credit risk sharing between the FHA and private mortgage insurers, these changes may be beneficial to Arch MI U.S. However, there can be no assurance that any FHA reform legislation will be enacted into law, and what provisions may be contained in any final legislation, if any.

We are unable to predict whether any of these proposed laws and regulations will be adopted, the form in which any such laws and regulations would be adopted, or the effect, if any, these developments would have on our operations and financial condition. See "—U.S. Insurance Regulation—General."

Basel III. In 1988, the Basel Committee on Banking Supervision developed the Basel Capital Accord ("Basel I"), which set out international benchmarks for assessing banks' capital adequacy requirements. In 2005, the Basel Committee issued an update

to Basel I (“Basel II”), which, among other things, governs the capital treatment of mortgage insurance purchased by domestic and international banks in respect of their origination and securitization activities. In 2013, Federal banking agencies approved new capital regulations implementing in the United States the Basel III international agreement on capital standards (“Basel III”). These regulations include an “Advanced Approach” which is only applicable to the very largest banking organizations and other financial companies determined to be “systemically important.” Smaller banking companies (generally with assets less than \$250 billion) are subject to a simpler framework called the “Standardized Approach.” The Basel III regulations also restrict the instruments that can count toward meeting the capital requirements, thereby placing greater emphasis on common equity and retained earnings.

Banks that use the Advanced Approach utilize proprietary models to determine their capital requirements under stress, and include specific capital requirements for mortgages held in portfolio based on such factors as the probability of default, the loss to the bank in the event of a default, and the bank’s exposure at default. The existence of mortgage insurance may be factored into these models, and may result in a lower capital requirement for certain classes of mortgage loans. However, the degree to which mortgage insurance reduces capital requirements depends on the characteristics of the loans and regulatory approval of the methodology used by the banking companies. Therefore, the full extent to which mortgage insurance reduces capital requirements under this approach is uncertain.

Under the Standardized Approach, the capital treatment of mortgage loans is essentially unchanged from Basel II. Prudently underwritten first mortgage loans generally receive a risk weight of 50%. The existence of mortgage insurance will compensate for an original loan-to-value ratio of less than 90%. If a mortgage is originated with a loan-to-value ratio that is greater than 90%, it will not be considered to be prudently underwritten unless the loan is protected by mortgage insurance or other credit support, such as readily marketable collateral.

In December 2014, the Basel Committee issued a proposal to make further revisions in the Basel III capital rules. Among other things, the new proposal would have introduced a table of risk weights for residential mortgages ranging from 25% to 100% based on the loan-to-value ratio. The Basel Committee issued a revised proposed revision to the Standardized Approach in December 2015 with comments due in March 2016. In September 2016, the heads of state represented on the Basel Committee released a statement reiterating their support for the revisions, including the changes to the capital charges for mortgage loans.

Under both the Advanced and Standardized Approaches, the risk weight for mortgage servicing assets held by banks is sharply increased, and mortgage servicing assets above certain levels must be deducted from capital. Since a significant

percentage of the mortgages insured by the mortgage insurance industry are serviced by banks or bank-owned mortgage companies, these changes could cause shifts in the amounts of mortgages serviced by banks and bank affiliates or subsidiaries relative to non-banking organizations. It is difficult to predict the impact these shifts may have on the quality of the servicing of insured mortgages or the ultimate impact on the mortgage insurance industry.

In addition to new capital standards, the Basel III international accord also calls upon the international banking regulators to impose minimum liquidity requirements on banking institutions. In September 2014, federal banking agencies finalized a regulation implementing this new Basel III liquidity requirement by prescribing a “liquidity coverage ratio” or “LCR.” The LCR was phased in over a two year period that began on January 1, 2015. The LCR requires covered banking organizations (those with \$50 billion or more in assets) to maintain sufficient amounts of high quality liquid assets to withstand a specified run on the institution during a period of severe economic stress. Mortgages and mortgage-related securities are not considered to be high quality liquid assets under this test. Therefore, covered banks may decide to reduce their mortgage loan portfolios in order to replace these assets with investments that meet the definition of high quality liquid assets. We cannot predict what, if any, effect this may have on the demand for mortgage insurance.

United Kingdom Insurance Regulation

General. The Prudential Regulation Authority (“PRA”) and the Financial Conduct Authority (“FCA”) regulate insurance and reinsurance companies and firms carrying on insurance mediation activities operating in the U.K. under the Financial Services and Markets Act 2000 (the “FSMA”). In May 2004, Arch Insurance Company Europe was granted the relevant permissions for the classes of insurance business which it underwrites in the U.K. In 2009, AUAL was licensed and authorized by relevant U.K. regulator and the Lloyd’s Franchise Board and holds the relevant permissions for the classes of insurance business which are underwritten in the U.K. by Arch Syndicate 2012. Arch Syndicate 2012 has one member, Arch Syndicate Investments Ltd. (“ASIL”). All U.K. companies are also subject to a range of statutory provisions, including the laws and regulations of the Companies Act 2006 (as amended) (the “U.K. Companies Act”).

The objectives of the PRA are to promote the safety and soundness of all firms it supervises and to secure an appropriate degree of protection for policyholders. The objectives of the FCA are to ensure customers receive financial services and products that meet their needs, to promote sound financial systems and markets and to ensure that firms are stable and resilient with transparent pricing information and which compete effectively and have the interests of their customers and the integrity of the market at the heart of how they run their

business. The PRA has responsibility for the prudential regulation of banks and insurers, while the FCA has responsibility for the conduct of business regulation in the wholesale and retail markets. The PRA and the FCA adopt separate methods of assessing regulated firms on a periodic basis. Arch Insurance Europe and AUAL are subject to periodic assessment by the PRA along with all regulated firms. Arch Insurance Company Europe and AUAL are subject to regulation by both the PRA and FCA.

Lloyd's Supervision. The operations of AUAL and related Arch Syndicate 2012 and its corporate member, ASIL, are subject to the byelaws and regulations made by (or on behalf of) the Council of Lloyd's, and requirements made under those byelaws. The Council of Lloyd's, established in 1982 by Lloyd's Act 1982, has overall responsibility and control of Lloyd's. Those byelaws, regulations and requirements provide a framework for the regulation of the Lloyd's market, including specifying conditions in relation to underwriting and claims operations of Lloyd's participants. Lloyd's is also subject to the provisions of the FSMA. Lloyd's is authorized by the PRA and regulated by the PRA and FCA. Those entities acting within the Lloyd's market are required to comply with the requirements of the FSMA and provisions of the PRA's or FCA's rules, although the PRA has delegated certain of its powers, including some of those relating to prudential requirements, to Lloyd's. ASIL, as a member of Lloyd's, is required to contribute 0.5% of Arch Syndicate 2012's premium income limit for each year of account to the Lloyd's central fund. The Lloyd's central fund is available if members of Lloyd's assets are not sufficient to meet claims for which the member is liable. As a member of Lloyd's, ASIL may also be required to contribute to the central fund by way of a supplement to a callable layer of up to 3% of Arch Syndicate 2012's premium income limit for the relevant year of account. In addition, AUAL, on behalf of Arch Syndicate 2012, is approved to underwrite excess and surplus lines insurance in most states in the U.S. through Lloyd's licenses. Such activities must be in compliance with the Lloyd's requirements.

Financial Resources. A new European solvency framework and prudential regime for insurers and reinsurers, under the Solvency II Directive 2009/138/EC ("Solvency II"), took effect in full on January 1, 2016. See "European Union Insurance and Reinsurance Regulation—Insurance and Reinsurance Regulatory Regime" below for additional details.

Arch Insurance Company Europe and AUAL (on behalf of Syndicate 2012) are required to meet economic risk-based solvency requirements imposed under Solvency II. Solvency II, together with European Commission "delegated acts" and guidance issued by the European Insurance and Occupational Pensions Authority ("EIOPA") sets out classification and eligibility requirements, including the features which capital must display in order to qualify as regulatory capital.

Financial Services Compensation Scheme. The Financial Services Compensation Scheme ("FSCS") is a scheme established under FSMA to compensate eligible policyholders of insurance companies who may become insolvent. The FSCS is funded by the levies that it has the power to impose on all insurers. Arch Insurance Europe could be required to pay levies to the FSCS.

Restrictions on Acquisition of Control. Under FSMA, the prior consent of the PRA or FCA, as applicable, is required, before any person can become a controller or increase its control over any regulated company, including Arch Insurance Company Europe and AUAL, or over the parent undertaking of any regulated company. Therefore, the PRA's or FCA's prior consent, as applicable, is required before any person can become a controller of ACGL. Prior consent is also required from Lloyd's before any person can become a controller or increase its control over a corporate member or a managing agent or a parent undertaking of a corporate member or managing agent. A controller is defined for these purposes as a person who holds (either alone or in concert with others) 10% or more of the shares or voting power in the relevant company or its parent undertaking.

Restrictions on Payment of Dividends. Under English law, all companies are restricted from declaring a dividend to their shareholders unless they have "profits available for distribution." The calculation as to whether a company has sufficient profits is based on its accumulated realized profits minus its accumulated realized losses. U.K. insurance regulatory laws do not prohibit the payment of dividends, but the PRA or FCA, as applicable, requires that insurance companies and insurance intermediaries maintain certain solvency margins and may restrict the payment of a dividend by Arch Insurance Company Europe, AUAL or ASIL. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Financial Condition, Liquidity and Capital Resources—Liquidity and Capital Resources" and note 23, "Statutory Information," of the notes accompanying our financial statements.

European Union Considerations. Through their respective authorizations in the U.K., a Member State of the European Union ("EU"), Arch Insurance Company Europe's and AUAL's authorizations are recognized throughout the European Economic Area ("EEA"), subject only to certain notification and application requirements. This authorization enables Arch Insurance Company Europe and AUAL to exercise "passporting" rights which allows Arch Insurance Company Europe and AUAL to establish a branch in any other Member State of the EU, where such entity will be subject to the insurance regulations of each such Member State with respect to the conduct of its business in such Member State, but remain subject only to the financial and operational supervision by the PRA or FCA (as applicable). The framework for the

establishment of branches in Member States of the EU other than the U.K. was generally set forth, and remains subject to, directives adopted by the Council, the legislative body of the EU, which directives are then implemented in each Member State. Arch Insurance Company Europe currently has branches in Germany, Italy, Spain and Denmark and may establish branches in other Member States of the EU in the future. Further, through its passporting rights, Arch Insurance Company Europe and AUAL have the freedom to provide insurance services anywhere in the EEA subject to compliance with certain rules governing such provision, including notification to the PRA or FCA, as applicable.

Following the referendum in June 2016 in which a majority of voting U.K. citizens voted in favor of the U.K. leaving the EU (“Brexit”), the U.K. withdrawal from the EU will lead to a loss of passporting rights for financial institutions in the U.K., except to the extent that any aspect of the regime is preserved in a separate agreement between the EU and the U.K. See “Risks Relating to Our Industry” under “Risk Factors” for additional details on the potential impact of Brexit.

Canada Insurance Regulation

Arch Insurance Canada and Arch Re Canada are subject to federal, as well as provincial and territorial, regulation in Canada. The Office of the Superintendent of Financial Institutions (“OSFI”) is the federal regulatory body that, under the Insurance Companies Act (Canada), regulates federal Canadian and non-Canadian insurance/reinsurance companies operating in Canada. Arch Insurance Canada and Arch Re Canada are subject to regulation in the provinces and territories in which they underwrite insurance/reinsurance, and the primary goal of insurance/reinsurance regulation at the provincial and territorial levels is to govern the market conduct of insurance/reinsurance companies. Arch Insurance Canada is licensed to carry on insurance business by OSFI and in each province and territory. Arch Re Canada is licensed to carry on reinsurance business by OSFI and in the provinces of Ontario and Quebec.

Under the Insurance Companies Act (Canada), Arch Insurance Canada is required to maintain an adequate amount of capital in Canada, calculated in accordance with a test promulgated by OSFI called the Minimum Capital Test, and Arch Re Canada is required to maintain an adequate margin of assets over liabilities in Canada, calculated in accordance with a test promulgated by OSFI called the Branch Adequacy of Assets Test. OSFI has implemented a risk-based methodology for assessing insurance/reinsurance companies operating in Canada known as its “Supervisory Framework.” In applying the Supervisory Framework, OSFI considers the inherent risks of the business and the quality of risk management for each significant activity of each operating entity. Under the Insurance Companies Act (Canada), approval of the Minister of Finance (Canada) is required in connection with certain acquisitions of shares of, or

control of, Canadian insurance companies such as Arch Insurance Canada, and notice to and/or approval of OSFI is required in connection with the payment of dividends by or redemption of shares by Canadian insurance companies such as Arch Insurance Canada.

Ireland Insurance and Reinsurance Regulation

General. The Central Bank of Ireland (“CBOI”) regulates insurance and reinsurance companies and intermediaries authorized in Ireland. Our three Irish operating subsidiaries are Arch Re Europe, Arch MI Europe and Arch Underwriters Europe. Arch Re Europe was licensed and authorized by the CBOI as a non-life reinsurer in October 2008 and as a life reinsurer in November 2009. Arch MI Europe was licensed and authorized by the CBOI as a non-life insurer in December 2011. Arch Underwriters Europe was registered by the CBOI as an insurance and reinsurance intermediary in July 2014. Arch Re Europe, Arch MI Europe and Arch Underwriters Europe are subject to the supervision of the CBOI and must comply with Irish insurance acts and regulations as well as with directions and guidance issued by the CBOI.

Arch Re Europe and Arch MI Europe are required to comply with Solvency II requirements. See “European Union Insurance and Reinsurance Regulation—Insurance and Reinsurance Regulatory Regime” below for additional details. As an intermediary, Arch Underwriters Europe is subject to a different regulatory regime and is not subject to solvency capital rules, but must comply with requirements such as to maintain professional indemnity insurance and to have directors that are fit and proper. Our Irish subsidiaries are also subject to the general body of Irish company laws and regulations including the provisions of the Companies Act 2014.

Financial Resources. Arch Re Europe and Arch MI Europe are required to meet economic risk-based solvency requirements imposed under Solvency II. Solvency II, together with European Commission “delegated acts” and guidance issued by EIOPA sets out classification and eligibility requirements, including the features which capital must display in order to qualify as regulatory capital.

Restrictions on Acquisitions. Under Irish law, the prior consent of the CBOI is required before any person can acquire or increase a qualifying holding in an Irish insurer or reinsurer, including Arch MI Europe and Arch Re Europe, or their parent undertakings. A qualifying holding is defined for these purposes as a direct or indirect holding that represents 10% or more of the capital of, or voting rights, in the undertaking or makes it possible to exercise a significant influence over the management of the undertaking.

Restrictions on Payment of Dividends. Under Irish company law, Arch Re Europe, Arch MI Europe and Arch Underwriters Europe are permitted to make distributions only out of profits

available for distribution. A company's profits available for distribution are its accumulated, realized profits, so far as not previously utilized by distribution or capitalization, less its accumulated, realized losses, so far as not previously written off in a reduction or reorganization of capital duly made. Further, the CBOI has powers to intervene if a dividend payment were to lead to a breach of regulatory capital requirements. See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Financial Condition, Liquidity and Capital Resources-Liquidity and Capital Resources" and note 23, "Statutory Information," of the notes accompanying our financial statements.

European Union Considerations. As Arch Re Europe, Arch MI Europe and Arch Underwriters Europe are authorized by the CBOI in Ireland, a Member State of the EU, those authorizations are recognized throughout the EEA. Subject only to certain notification and application requirements, Arch Re Europe, Arch MI Europe and Arch Underwriters Europe can provide services, or establish a branch, in any other Member State of the EEA. Although, in doing so, they may be subject to the laws of such Member States with respect to the conduct of business in such Member State, company law registrations and other matters, they will remain subject to financial and operational supervision by the CBOI only. Arch Re Accident & Health ApS ("Arch Re Denmark") is an underwriting agency underwriting accident and health business for Arch Re Europe in Denmark. Arch Re Europe also has a branch in the U.K., which underwrites non-life reinsurance risk for Arch Re Europe. Arch Re Europe also has a branch outside the EEA, Arch Reinsurance Europe Designated Activity Company, Dublin (Ireland), Zurich Branch ("Arch Re Europe Swiss Branch").

As part of its application for registration, Arch Underwriters Europe requested the CBOI to make the necessary notifications to permit it to provide insurance and reinsurance intermediary services in all EEA Member States. Arch Underwriters Europe currently has branches in the following EU countries: U.K., Italy, Finland and Cyprus.

Switzerland Reinsurance Regulation

In December 2008, Arch Re Europe opened Arch Re Europe Swiss Branch as a branch office. As Arch Re Europe is domiciled outside of Switzerland and its activities are limited to reinsurance, the Arch Re Europe Swiss Branch in Switzerland is not required to be licensed by the Swiss insurance regulatory authorities.

In August 2014, Arch Underwriters Europe opened a branch office in Zurich ("Arch Underwriters Europe Swiss Branch") to render reinsurance advisory services to certain group companies. Arch Underwriters Europe Swiss Branch is registered with the commercial register of the Canton of Zurich. Since its activities are limited to advisory services for reinsurance matters, the Arch Underwriters Europe Swiss

Branch is not required to be licensed by the Swiss insurance regulatory authorities.

European Union Insurance and Reinsurance Regulation

Insurance and Reinsurance Regulatory Regime. Solvency II took effect in full on January 1, 2016. Solvency II is a new regulatory regime which imposes economic risk-based solvency requirements across all EU Member States and consists of three pillars: Pillar I-quantitative capital requirements, based on a valuation of the entire balance sheet; Pillar II-qualitative regulatory review, which includes governance, internal controls, enterprise risk management and supervisory review process; and Pillar III-market discipline, which is accomplished through reporting of the insurer's financial condition to regulators and the public. Solvency II is supplemented by European Commission Delegated Regulation (EU) 2015/35 (the "Delegated Regulation"), other European Commission "delegated acts" and binding technical standards, and guidelines issued by EIOPA. The Delegated Regulation sets out more detailed requirements for individual insurance and reinsurance undertakings, as well as for groups, based on the overarching provisions of Solvency II, which together make up the core of the single prudential rulebook for insurance and reinsurance undertakings in the EU.

Insurers and reinsurers established in a Member State of the EU have the freedom to establish branches in and provide services to all EEA states. Arch Insurance Company Europe and AUAL, being established in the U.K. and authorized by the PRA and FCA, are able, subject to regulatory notifications and there being no objection from the relevant U.K. regulator, to establish branches and provide insurance and reinsurance services in all EEA Member States. Equally, Arch Re Europe and Arch MI Europe, being established in Ireland and authorized by the CBOI are able, subject to similar regulatory notifications and there being no objection from the CBOI to establish branches and provide reinsurance services in all EEA states.

Solvency II does not prohibit EEA insurers from obtaining reinsurance from reinsurers licensed outside the EEA, such as Arch Re Bermuda. As such, and subject to the specific rules in each Member State, Arch Re Bermuda may do business from Bermuda with insurers in EEA Member States, but it may not directly operate its reinsurance business within the EEA. Article 172 of Solvency II provides that reinsurance contracts concluded by insurance undertakings in the EEA with reinsurers having their head office in a country whose solvency regime has been determined to be equivalent to Solvency II shall be treated in the same manner as reinsurance contracts with undertakings in the EEA authorized under Solvency II. In this regard, with effect from January 1, 2016, the supervisory regime, including the solvency regime, in Bermuda has been determined to be equivalent to that laid down in Solvency II, except in relation to captives and special purpose insurers. Solvency II also includes specific measures providing for the

supervision of insurance and reinsurance groups. However, as a consequence of the above determination of equivalence, regulators within the EEA are required to rely on group-wide supervision exercised by the BMA.

TAX MATTERS

The following summary of the taxation of ACGL and the taxation of our shareholders is based upon current law and is for general information only. Legislative, judicial or administrative changes may be forthcoming that could affect this summary.

The following legal discussion (including and subject to the matters and qualifications set forth in such summary) of certain tax considerations (a) under “—Taxation of ACGL—Bermuda” and “—Taxation of Shareholders—Bermuda Taxation” is based upon the advice of Conyers Dill & Pearman Limited, Hamilton, Bermuda and (b) under “—Taxation of ACGL-United States,” “—Taxation of Shareholders-United States Taxation,” “—Taxation of Our U.S. Shareholders” and “—United States Taxation of Non-U.S. Shareholders” is based upon the advice of Cahill Gordon & Reindel LLP, New York, New York (the advice of such firms does not include accounting matters, determinations or conclusions relating to the business or activities of ACGL). The summary is based upon current law and is for general information only. The tax treatment of a holder of our common or preferred shares, or of a person treated as a holder of our shares for U.S. federal income, state, local or non-U.S. tax purposes, may vary depending on the holder’s particular tax situation. Legislative, judicial or administrative changes or interpretations may be forthcoming that could be retroactive and could affect the tax consequences to us or to holders of our shares.

Taxation of ACGL

Bermuda. Under current Bermuda law, ACGL is not subject to tax on income or profits, withholding, capital gains or capital transfers. ACGL has obtained from the Minister of Finance under the Exempted Undertakings Tax Protection Act 1966 an assurance that, in the event that Bermuda enacts legislation imposing tax computed on profits, income, any capital asset, gain or appreciation, or any tax in the nature of estate duty or inheritance, the imposition of any such tax shall not be applicable to ACGL or to any of our operations or our shares, debentures or other obligations until March 31, 2035. We could be subject to taxes in Bermuda after that date. This assurance will be subject to the proviso that it is not to be construed so as to prevent the application of any tax or duty to such persons as are ordinarily resident in Bermuda (we are not so currently affected) or to prevent the application of any tax payable in accordance with the provisions of the Land Tax Act 1967 or otherwise payable in relation to any property leased to us or our insurance subsidiary. We pay annual Bermuda government fees,

and our Bermuda insurance and reinsurance subsidiary pays annual insurance license fees. In addition, all entities employing individuals in Bermuda are required to pay a payroll tax and other sundry taxes payable, directly or indirectly, to the Bermuda government.

United States. ACGL and its non-U.S. subsidiaries intend to conduct their operations in a manner that will not cause them to be treated as engaged in a trade or business in the United States and, therefore, will not be required to pay U.S. federal income taxes (other than U.S. excise taxes on insurance and reinsurance premium and withholding taxes on dividends and certain other U.S. source investment income). However, because definitive identification of activities which constitute being engaged in a trade or business in the U.S. is not provided by the Internal Revenue Code of 1986, as amended (the “Code”), or regulations or court decisions, there can be no assurance that the U.S. Internal Revenue Service (“IRS”) will not contend successfully that ACGL or its non-U.S. subsidiaries are or have been engaged in a trade or business in the United States. A foreign corporation deemed to be so engaged would be subject to U.S. income tax, as well as the branch profits tax, on its income, which is treated as effectively connected with the conduct of that trade or business unless the corporation is entitled to relief under the permanent establishment provisions of a tax treaty. Such income tax, if imposed, would be based on effectively connected income computed in a manner generally analogous to that applied to the income of a domestic corporation, except that deductions and credits generally are not permitted unless the foreign corporation has timely filed a U.S. federal income tax return in accordance with applicable regulations. Penalties may be assessed for failure to file tax returns. The 30% branch profits tax is imposed on net income after subtracting the regular corporate tax and making certain other adjustments.

Under the income tax treaty between Bermuda and the United States (the “Treaty”), ACGL’s Bermuda insurance subsidiaries will be subject to U.S. income tax on any insurance premium income found to be effectively connected with a U.S. trade or business only if that trade or business is conducted through a permanent establishment in the United States. No regulations interpreting the Treaty have been issued. While there can be no assurances, ACGL does not believe that any of its Bermuda insurance subsidiaries has a permanent establishment in the United States. Such subsidiaries would not be entitled to the benefits of the Treaty if (i) 50% or less of ACGL’s shares were beneficially owned, directly or indirectly, by Bermuda residents or U.S. citizens or residents, or (ii) any such subsidiary’s income were used in substantial part to make disproportionate distributions to, or to meet certain liabilities to, persons who are not Bermuda residents or U.S. citizens or residents. While there can be no assurances, ACGL believes that its Bermuda insurance subsidiaries are eligible for Treaty benefits.

The Treaty clearly applies to premium income, but may be construed as not protecting investment income. If ACGL's Bermuda insurance subsidiaries were considered to be engaged in a U.S. trade or business and were entitled to the benefits of the Treaty in general, but the Treaty were not found to protect investment income, a portion of such subsidiaries' investment income could be subject to U.S. federal income tax.

Non-U.S. insurance companies carrying on an insurance business within the United States have a certain minimum amount of effectively connected net investment income, determined in accordance with a formula that depends, in part, on the amount of U.S. risk insured or reinsured by such companies. If any of ACGL's non-U.S. insurance subsidiaries is considered to be engaged in the conduct of an insurance business in the United States, a significant portion of such company's investment income could be subject to U.S. income tax.

Non-U.S. corporations not engaged in a trade or business in the United States are nonetheless subject to U.S. income tax on certain "fixed or determinable annual or periodic gains, profits and income" derived from sources within the United States as enumerated in Section 881(a) of the Code (such as dividends and certain interest on investments), subject to exemption under the Code or reduction by applicable treaties.

The United States also imposes an excise tax on insurance and reinsurance premiums paid to non-U.S. insurers or reinsurers with respect to risks located in the United States. The rates of tax, unless reduced by an applicable U.S. tax treaty, are 4% for non-life insurance premiums and 1% for life insurance and all reinsurance premiums.

United Kingdom. Our U.K. subsidiaries are companies incorporated and have their central management and control in the U.K., and are therefore resident in the U.K. for corporation tax purposes. As a result, they will be subject to U.K. corporation tax on their respective trading profits. The U.K. branches of Arch Re Europe and Arch Underwriters Europe will be subject to U.K. corporation tax on the profits (both income profits and chargeable gains) attributable to each branch. The main rate of U.K. corporation tax for the financial year starting April 1, 2016 is 20% on profits. It has been announced that the U.K. corporation tax rate for the financial year starting April 1, 2017 will be 19% on profits.

Canada. Arch Insurance Canada, a Canadian federal insurance company, commenced underwriting in 2013. Arch Re U.S., through a branch, commenced underwriting reinsurance in Canada in January 2015. Arch Insurance Canada is taxed on its worldwide income. Arch Re U.S. is taxed on its net business income earned in Canada. The general federal corporate income tax rate in Canada is currently 15%. Provincial and territorial corporate income tax rates are added to the general federal

corporate income tax rate and generally vary between 11% and 16%.

Ireland. Each of Arch Re Europe, Arch MI Europe and Arch Underwriters Europe is incorporated and resident in Ireland for corporation tax purposes and will be subject to Irish corporate tax on its worldwide profits, including the profits of the branches of Arch Re Europe and Arch Underwriters Europe. Any creditable foreign tax payable will be creditable against Arch Re Europe's Irish corporate tax liability on the results of Arch Re Europe's branches with the same principle applied to Arch Underwriters Europe's branches. The current rate of Irish corporation tax applicable to such profits is 12.5%.

Switzerland. Arch Re Europe Swiss Branch and Arch Underwriters Europe Swiss Branch are subject to Swiss corporation tax on the profit which is allocated to the branch. The effective tax rate is approximately 21.12% for Swiss federal, cantonal and communal corporation taxes on the profit. The effective tax rate of the annual cantonal and communal capital taxes on the equity which is allocated to Arch Re Europe Swiss Branch and Arch Underwriters Europe Swiss Branch is approximately 0.17%.

Denmark. Arch Re Denmark, established as a subsidiary of Arch Re Bermuda, is subject to Danish corporation taxes on its profits at a rate of 25% for 2013 and the preceding years. The corporate tax rate was reduced to 24.5% for 2014, to 23.5% for 2015 and to 22% for 2016 and onwards.

Taxation of Shareholders

The following summary sets forth certain United States federal income tax considerations related to the purchase, ownership and disposition of our common shares and our non-cumulative preferred shares ("preferred shares"). Unless otherwise stated, this summary deals only with shareholders ("U.S. Holders") that are United States Persons (as defined below) who hold their common shares and preferred shares as capital assets and as beneficial owners. The following discussion is only a general summary of the United States federal income tax matters described herein and does not purport to address all of the United States federal income tax consequences that may be relevant to a particular shareholder in light of such shareholder's specific circumstances. In addition, the following summary does not describe the United States federal income tax consequences that may be relevant to certain types of shareholders, such as banks, insurance companies, regulated investment companies, real estate investment trusts, financial asset securitization investment trusts, dealers in securities or traders that adopt a mark-to-market method of tax accounting, tax exempt organizations, expatriates or persons who hold the common shares or preferred shares as part of a hedging or conversion transaction or as part of a straddle, who may be subject to special rules or treatment under the Code. This discussion is based upon the Code, the Treasury regulations

promulgated there under and any relevant administrative rulings or pronouncements or judicial decisions, all as in effect on the date of this annual report and as currently interpreted, and does not take into account possible changes in such tax laws or interpretations thereof, which may apply retroactively. This discussion does not include any description of the tax laws of any state or local governments within the United States, or of any foreign government, that may be applicable to our common shares or preferred shares or the shareholders. Persons considering making an investment in the common shares or preferred shares should consult their own tax advisors concerning the application of the United States federal tax laws to their particular situations as well as any tax consequences arising under the laws of any state, local or foreign taxing jurisdiction prior to making such investment.

If a partnership holds our common shares or preferred shares, the tax treatment of a partner will generally depend upon the status of the partner and the activities of the partnership. If you are a partner of a partnership holding our common shares or preferred shares, you should consult your tax advisor.

For purposes of this discussion, the term “United States Person” means:

- a citizen or resident of the United States,
- a corporation or entity treated as a corporation created or organized in or under the laws of the United States, any state thereof, or the District of Columbia,
- an estate the income of which is subject to United States federal income taxation regardless of its source,
- a trust if either (x) a court within the United States is able to exercise primary supervision over the administration of such trust and one or more United States persons have the authority to control all substantial decisions of such trust or (y) the trust has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes or
- any other person or entity that is treated for U.S. federal income tax purposes as if it were one of the foregoing.

Bermuda. Currently, there is no Bermuda withholding tax on dividends paid by us.

United States—Taxation of Dividends. The preferred shares should be properly classified as equity rather than debt for U.S. federal income tax purposes. Subject to the discussions below relating to the potential application of the CFC, “related person insurance income” (“RPII”) and PFIC rules, as defined below, cash distributions, if any, made with respect to our common shares or preferred shares will constitute dividends for U.S. federal income tax purposes to the extent paid out of our current or accumulated earnings and profits (as computed using U.S.

tax principles). If a U.S. Holder of our common shares or our preferred shares is an individual or other non-corporate holder, dividends paid, if any, to that holder that constitute qualified dividend income generally will be taxable at the rate applicable for long-term capital gains (generally up to 20%), provided that such person meets a holding period requirement. Generally in order to meet the holding period requirement, the United States Person must hold the common shares for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and must hold preferred shares for more than 90 days during the 181-day period beginning 90 days before the ex-dividend date. Dividends paid, if any, with respect to common shares or preferred shares generally will be qualified dividend income, provided the common shares or preferred shares are readily tradable on an established securities market in the U.S. in the year in which the shareholder receives the dividend (which should be the case for shares that are listed on the NASDAQ Stock Market or the New York Stock Exchange) and ACGL is not considered to be a passive foreign investment company in either the year of the distribution or the preceding taxable year. No assurance can be given that the preferred shares will be considered readily tradable on an established securities market in the United States. See “—Taxation of Our U.S. Shareholders” below.

A U.S. Holder that is an individual, estate or a trust that does not fall into a special class of trusts that is exempt from such tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. Holder’s “net investment income” for the relevant taxable year and (2) the excess of the U.S. Holder’s modified adjusted gross income for the taxable year over a certain threshold (which in the case of individual will be between \$125,000 and \$250,000, depending on the individual’s circumstances). A U.S. Holder’s net investment income will generally include its dividend income and its net gains from the disposition of our common shares and preferred shares, unless such dividend income or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities).

Distributions with respect to the common shares and the preferred shares will not be eligible for the dividends received deduction allowed to U.S. corporations under the Code. To the extent distributions on our common shares and preferred shares exceed our earnings and profits, they will be treated first as a return of the U.S. Holder’s basis in our common shares and our preferred shares to the extent thereof, and then as gain from the sale of a capital asset.

United States—Sale, Exchange or Other Disposition. Subject to the discussions below relating to the potential application of the CFC, RPII and PFIC rules, holders of common shares and preferred shares generally will recognize capital gain or loss for U.S. federal income tax purposes on the sale, exchange or disposition of common shares or preferred shares, as applicable.

United States—Redemption of Preferred Shares. A redemption of the preferred shares will be treated under section 302 of the Code as a dividend if we have sufficient earnings and profits, unless the redemption satisfies one of the tests set forth in section 302(b) of the Code enabling the redemption to be treated as a sale or exchange, subject to the discussion herein relating to the potential application of the CFC, RPII and PFIC rules. Under the relevant Code section 302(b) tests, the redemption should be treated as a sale or exchange only if it (1) is substantially disproportionate, (2) constitutes a complete termination of the holder's stock interest in us or (3) is "not essentially equivalent to a dividend." In determining whether any of these tests are met, shares considered to be owned by the holder by reason of certain constructive ownership rules set forth in the Code, as well as shares actually owned, must generally be taken into account. It may be more difficult for a United States Person who owns, actually or constructively by operation of the attribution rules, any of our other shares to satisfy any of the above requirements. The determination as to whether any of the alternative tests of section 302(b) of the Code is satisfied with respect to a particular holder of the preference shares depends on the facts and circumstances as of the time the determination is made.

Taxation of Our U.S. Shareholders

Controlled Foreign Corporation Rules. Under our bye-laws, the 9.9% voting restriction applicable to the Controlled Shares of a U.S. Person (as defined in our bye-laws) generally does not apply to certain of our investors. Depending upon the ownership of these investors and as a result of certain attribution rules, we and our foreign subsidiaries could be controlled foreign corporations ("CFCs"). That status as a CFC would not cause us or any of our subsidiaries to be subject to U.S. federal income tax. Such status also would have no adverse U.S. federal income tax consequences for any U.S. Holder that is considered to own less than 10% of the total combined voting power of our shares or those of our foreign subsidiaries. Only U.S. Holders that are considered to own 10% or more of the total combined voting power of our shares or those of our foreign subsidiaries (taking into account shares actually owned by such U.S. Holder as well as shares attributed to such U.S. Holder under the Code or the regulations there under) (a "10% U.S. Voting Shareholder") would be affected by our status as a CFC. The preferred shares generally should not be considered voting stock for purposes of determining whether a United States Person would be a 10% U.S. Voting Shareholder. The shares may, however, become entitled to vote (as a class along with any other class of preferred shares of ACGL then outstanding) for the election of two additional members of the board of directors of ACGL if ACGL does not declare and pay dividends for the equivalent of six or more dividend periods. In such case, the preferred shares should be treated as voting stock for as long as such voting rights continue. Our bye-laws are intended to prevent any U.S. Holder from being considered a 10% U.S. Voting Shareholder by limiting the votes conferred by the

Controlled Shares (as defined in our bye-laws) of any U.S. Person to 9.9% of the total voting power of all our shares entitled to vote. However, because under our bye-laws certain funds associated with Warburg Pincus LLC and Hellman & Friedman LLC generally are entitled to vote their directly owned common shares in full, a U.S. Holder that is attributed (under the Code or the regulations there under) common shares owned by such funds may be considered a 10% U.S. Voting Shareholder. If we are a CFC, a U.S. Holder that is considered a 10% U.S. Voting Shareholder would be subject to current U.S. federal income taxation (at ordinary income tax rates) to the extent of all or a portion of the undistributed earnings and profits of ACGL and our subsidiaries attributable to "subpart F income" (including certain insurance premium income and investment income) and may be taxable at ordinary income tax rates on any gain realized on a sale or other disposition (including by way of repurchase or liquidation) of our shares to the extent of the current and accumulated earnings and profits attributable to such shares.

While our bye-laws are intended to prevent any member from being considered a 10% U.S. Voting Shareholder (except as described above), there can be no assurance that a U.S. Holder will not be treated as a 10% U.S. Voting Shareholder, by attribution or otherwise, under the Code or any applicable regulations there under.

Related Person Insurance Income Rules. Generally, we do not expect the gross RPII (related person insurance income) of any of our non-U.S. subsidiaries to equal or exceed 20% of its gross insurance income in any taxable year for the foreseeable future and do not expect the direct or indirect insureds (and related persons) of any such subsidiary to directly or indirectly own 20% or more of either the voting power or value of our stock. Consequently, we do not expect any U.S. person owning common shares or preferred shares to be required to include in gross income for U.S. federal income tax purposes RPII income, but there can be no assurance that this will be the case.

Section 953(c)(7) of the Code generally provides that Section 1248 of the Code (which generally would require a U.S. Holder to treat certain gains attributable to the sale, exchange or disposition of common shares or preferred shares as a dividend) will apply to the sale or exchange by a U.S. shareholder of shares in a foreign corporation that is characterized as a CFC under the RPII rules if the foreign corporation would be taxed as an insurance company if it were a domestic corporation, regardless of whether the U.S. shareholder is a 10% U.S. Voting Shareholder or whether the corporation qualifies for either the RPII 20% ownership exception or the RPII 20% gross income exception. Although existing U.S. Treasury Department ("Treasury") regulations do not address the question, proposed Treasury regulations issued in April 1991 create some ambiguity as to whether Section 1248 and the requirement to file Form 5471 would apply when the foreign corporation has a foreign insurance subsidiary that is a

CFC for RPII purposes and that would be taxed as an insurance company if it were a domestic corporation. We believe that Section 1248 and the requirement to file Form 5471 will not apply to a less than 10% U.S. Shareholder because ACGL is not directly engaged in the insurance business. There can be no assurance, however, that the IRS will interpret the proposed regulations in this manner or that the Treasury will not take the position that Section 1248 and the requirement to file Form 5471 will apply to dispositions of our common shares or our preferred shares.

If the IRS or Treasury were to make Section 1248 and the Form 5471 filing requirement applicable to the sale of our shares, we would notify shareholders that Section 1248 of the Code and the requirement to file Form 5471 will apply to dispositions of our shares. Thereafter, we would send a notice after the end of each calendar year to all persons who were shareholders during the year notifying them that Section 1248 and the requirement to file Form 5471 apply to dispositions of our shares by U.S. Holders. We would attach to this notice a copy of Form 5471 completed with all our information and instructions for completing the shareholder information.

Tax-Exempt Shareholders. Tax-exempt entities may be required to treat certain Subpart F insurance income, including RPII, that is includible in income by the tax-exempt entity as unrelated business taxable income. Prospective investors that are tax exempt entities are urged to consult their tax advisors as to the potential impact of the unrelated business taxable income provisions of the Code.

Passive Foreign Investment Companies. Sections 1291 through 1298 of the Code contain special rules applicable with respect to foreign corporations that are “passive foreign investment companies” (“PFICs”). In general, a foreign corporation will be a PFIC if 75% or more of its income constitutes “passive income” or 50% or more of its assets produce passive income. If we were to be characterized as a PFIC, U.S. Holders would be subject to a penalty tax at the time of their sale of (or receipt of an “excess distribution” with respect to) their common shares or preferred shares. In general, a shareholder receives an “excess distribution” if the amount of the distribution is more than 125% of the average distribution with respect to the shares during the three preceding taxable years (or shorter period during which the taxpayer held the stock). In general, the penalty tax is equivalent to an interest charge on taxes that are deemed due during the period the shareholder owned the shares, computed by assuming that the excess distribution or gain (in the case of a sale) with respect to the shares was taxable in equal portions throughout the holder’s period of ownership. The interest charge is equal to the applicable rate imposed on underpayments of U.S. federal income tax for such period. A U.S. shareholder may avoid some of the adverse tax consequences of owning shares in a PFIC by making a qualified electing fund (“QEF”) election. A QEF election is revocable

only with the consent of the IRS and has the following consequences to a shareholder:

- For any year in which ACGL is not a PFIC, no income tax consequences would result.
- For any year in which ACGL is a PFIC, the shareholder would include in its taxable income a proportionate share of the net ordinary income and net capital gains of ACGL and certain of its non-U.S. subsidiaries.

The PFIC statutory provisions contain an express exception for income “derived in the active conduct of an insurance business by a corporation which is predominantly engaged in an insurance business...” This exception is intended to ensure that income derived by a bona fide insurance company is not treated as passive income, except to the extent such income is attributable to financial reserves in excess of the reasonable needs of the insurance business. The PFIC statutory provisions contain a look-through rule that states that, for purposes of determining whether a foreign corporation is a PFIC, such foreign corporation shall be treated as if it “received directly its proportionate share of the income” and as if it “held its proportionate share of the assets” of any other corporation in which it owns at least 25% of the stock. We believe that we are not a PFIC, and we will use reasonable best efforts to cause us and each of our majority owned non-U.S. insurance subsidiaries not to constitute a PFIC. In April 2015, the IRS issued proposed regulations in an attempt to define the foreign insurance company exception to the PFIC rules (the “proposed PFIC insurance regulations”). Although the proposed PFIC insurance regulations are not effective until finalized, it is possible that, if finalized in their current form, the regulations could be interpreted to heighten the risk that one of our subsidiaries could be considered a PFIC.

No regulations interpreting the substantive PFIC provisions have yet been finalized. It is possible that the regulations interpreting the PFIC provisions will be issued in the future and contain rules different from those in the proposed PFIC insurance regulations. Each U.S. Holder should consult its own tax advisor as to the effects of these rules.

Proposed Legislation. On November 19, 2013, Senate Finance Committee then-Chairman Max Baucus (D-MT) released a tax reform discussion draft on international tax issues. A provision in the discussion draft would change the definition of a U.S. shareholder for CFC purposes and overhaul the PFIC rules. On February 26, 2014, the House Ways and Means Committee Chairman Dave Camp published a tax reform proposal titled “Tax Reform Act of 2014,” which was subsequently introduced to the Congress on December 11, 2014. Both the Baucus draft and the Camp bill contain a provision that would significantly modify the PFIC exception for certain insurance companies. On June 25, 2015, U.S. Senator Ron Wyden, a member of the U.S. Senate Finance Committee, introduced the “Offshore

Reinsurance Tax Fairness Act” that provides a “bright line” annual test for a foreign company seeking to qualify as an insurance company for purposes of the insurance company exception to the PFIC rules.

Prospective investors should consult their own tax advisor regarding the likelihood that the provisions in these discussion drafts, tax reform proposal and proposed legislation are enacted and any effect of such provisions.

United States Taxation of Non-U.S. Shareholders

Taxation of Dividends. Cash distributions, if any, made with respect to common shares or preferred shares held by shareholders who are not United States Persons (“Non-U.S. holders”) generally will not be subject to United States withholding tax.

Sale, Exchange or Other Disposition. Non-U.S. holders of common shares or preferred shares generally will not be subject to U.S. federal income tax with respect to gain realized upon the sale, exchange or other disposition of such shares unless such gain is effectively connected with a U.S. trade or business of the Non-U.S. holder in the United States or such person is present in the United States for 183 days or more in the taxable year the gain is realized and certain other requirements are satisfied.

Information Reporting and Backup Withholding. Non-U.S. holders of common shares or preferred shares will not be subject to U.S. information reporting or backup withholding with respect to dispositions of common shares effected through a non-U.S. office of a broker, unless the broker has certain connections to the United States or is a United States person. No U.S. backup withholding will apply to payments of dividends, if any, on our common shares or our preferred shares.

Sections 1471 through 1474 to the Code, known as the Foreign Account Tax Compliance Act (“FATCA”), impose a withholding tax of 30% on (i) U.S.-source interest, dividends and certain other types of income, and (ii) the gross proceeds from the sale or disposition of assets which produce such types of income, which are received by a foreign financial institution (“FFI”), unless such FFI enters into an agreement with the IRS to obtain certain information as to the identity of the direct and indirect owners of accounts in such institution. In addition, a 30% withholding tax may be imposed on the above payments to certain non-financial foreign entities which do not (i) certify to each respective withholding agent that they have no “substantial U.S. owners” (*i.e.*, a U.S. 10% direct or indirect shareholder), or (ii) provide such withholding agent with the certain information as to the identity of such substantial U.S. owners. The United States is in the process of negotiating intergovernmental agreements to implement FATCA (“IGAs”) with a number of jurisdictions. Bermuda has signed an IGA

with the United States. Different rules than those described above may apply under such an IGA.

Withholding on U.S.-source interest, dividends and certain other types of income applies from July 1, 2014, and withholding on gross proceeds will apply beginning on January 1, 2019. Prospective investors are urged to consult their own tax advisors as to the filing and information requirements that may be imposed on them in respect of their ownership of our common share or preferred shares.

Other Tax Laws. Shareholders should consult their own tax advisors with respect to the applicability to them of the tax laws of other jurisdictions.

ITEM 1A. RISK FACTORS

Set forth below are risk factors relating to our business. You should also refer to the other information provided in this report, including our “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our accompanying consolidated financial statements, as well as the information under the heading “Cautionary Note Regarding Forward-Looking Statements.”

Risks Relating to Our Industry

We operate in a highly competitive environment, and we may not be able to compete successfully in our industry.

The insurance and reinsurance industry is highly competitive. We compete with major U.S. and non-U.S. insurers and reinsurers, many of which have greater financial, marketing and management resources than we do, as well as other potential providers of capital willing to assume insurance and/or reinsurance risk. We also compete with new companies that continue to be formed to enter the insurance and reinsurance markets. In addition, continued consolidation within the insurance and reinsurance industry will further enhance the already competitive underwriting environment. These consolidated entities may use their enhanced market power and broader capital base to negotiate price reductions for products and services that compete with ours, and we may experience rate declines and possibly write less business. In our insurance business, we compete with insurers that provide specialty property and casualty lines of insurance, including Alleghany Corporation, Allied World Assurance Company, Ltd., American Financial Group, Inc., American International Group, Inc., AXIS Capital Holdings Limited, Berkshire Hathaway, Inc., Chubb Limited, CNA Financial Corp., Endurance Specialty Holdings Ltd., The Hartford Financial Services Group, Inc., HCC Insurance Holdings, Inc., Ironshore Inc., Liberty Mutual Insurance, Lloyd’s, Markel Insurance Company, RLI Corp., Tokio Marine HCC, The Travelers Companies, W.R. Berkley Corp., XL Group Ltd and Zurich Insurance Group. In our reinsurance business, we compete with reinsurers that provide property and casualty lines of reinsurance, including Alleghany Corporation, Argo International Holdings, Ltd., AXIS Capital Holdings Limited, Berkshire Hathaway, Inc., Chubb Limited, Endurance Specialty Holdings Ltd., Everest Re Group Ltd., Hannover Rückversicherung AG, Lloyd’s, Markel Global Reinsurance, Munich Re Group, PartnerRe Ltd., RenaissanceRe Holdings Ltd., SCOR Global P&C, SCOR Global Life, Swiss Reinsurance Company, Third Point Reinsurance Ltd., Validus Holdings Ltd. and XL Group Ltd. We believe that we do not have a significant market share in any of our property and casualty markets.

Financial institutions and other capital markets participants also offer alternative products and services similar to our own or alternative products that compete with insurance and reinsurance products, such as insurance/risk-linked securities, catastrophe bonds and derivatives. In recent years, capital market participants have been increasingly active in the reinsurance market and markets for related risks. Certain of the new companies entering the insurance and reinsurance markets are pursuing more aggressive investment strategies than do we and other traditional reinsurers, which may result in further downward pressure on premium rates. In this regard, we co-sponsored Watford Re, a newly formed property and casualty reinsurer, in 2014. We perform underwriting services and HPS manages the investments, seeking higher yields and potentially assuming more risk than in our investment portfolio. If the investment and/or insurance underwriting strategies are not successful, we may be exposed to a risk of loss on our investment and in respect of the reinsurance cessions. In addition, we may not be aware of other companies that may be planning to enter the segments of the insurance and reinsurance market in which we operate.

Our competitive position is based on many factors, including our perceived overall financial strength, ratings assigned by independent rating agencies, geographic scope of business, client and broker relationships, premiums charged, contract terms and conditions, products and services offered (including the ability to design customized programs), appropriate and timely claim payments, reputation, experience and qualifications of employees and local presence. We may not be successful in competing with others on any of these bases, and the intensity of competition in our industry may erode profitability and result in less favorable policy terms and conditions for insurance and reinsurance companies generally, including us.

In our U.S. mortgage business, we compete with five active U.S. mortgage insurers, which include the mortgage insurance subsidiaries of Essent Group Ltd., Genworth Financial Inc., MGIC Investment Corporation, NMI Holdings Inc. and Radian Group Inc. We believe that we have a significant market share in the mortgage insurance market following the closing of the UGC acquisition. The level of competition within the private mortgage insurance industry has been intense and is not expected to diminish. In response to competitive pressures, among other factors, we reduced certain premium rates in 2015. In addition to pricing, we compete with other private mortgage insurers on the basis of underwriting guidelines, loss mitigation practices, financial strength, reputation, customer relationships, technology, service and other factors. One or more private mortgage insurers may seek increased market share by reducing

pricing, or loosening their underwriting guidelines or practices, which could adversely affect our mortgage insurance operations. Competition within the private mortgage insurance industry could result in the loss of customers, lower premiums, riskier credit guidelines and other changes that could lower our revenues or increase our expenses.

The mortgage insurance industry's business has been limited as a result of competition with the Federal Housing Administration ("FHA"), which substantially increased its market share beginning in 2008. In January 2015, FHA reduced the annual mortgage insurance premium it charges from 1.35% of the loan amount to 0.85%. This premium reduction made private mortgage insurance less competitive with the FHA for borrowers with certain credit characteristics. In January 2017, FHA announced another premium reduction that would impact most borrowers. However, the new HUD commissioner indefinitely suspended this reduction pending further analysis. Further reductions will make private mortgage insurers less competitive with respect to certain borrowers. Other factors that could cause FHA to maintain or increase its share of the mortgage insurance market include: a further reduction in the premiums charged, or a shortening of the duration for which premiums are charged, for government mortgage insurance or a loosening of underwriting guidelines; imposition of additional loan level fees by the government sponsored entities ("GSEs"), Fannie Mae and Freddie Mac, on loans that require mortgage insurance; increases in GSE guaranty fees and the difference in the spread between Fannie Mae residential mortgage-backed securities and Ginnie Mae residential mortgage-backed securities; and the implementation of new regulations under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the Basel III Rules (as defined herein).

If the FHA or other government-sponsored mortgage insurance programs maintain or increase their share of the mortgage insurance market, our mortgage insurance business could be adversely affected. In addition to FHA and other federal mortgage insurance programs, lenders and investors may select other alternatives to private mortgage insurance, including: state-supported mortgage insurance funds in several states; lenders and other investors holding mortgages in portfolio and self-insuring; investors using credit enhancements other than mortgage insurance, using other credit enhancements in conjunction with reduced levels of mortgage insurance coverage, or accepting credit risk without credit enhancement; and lenders originating mortgages using "piggy-back" structures to avoid mortgage insurance, such as a first mortgage with an 80% loan-to-value and a second mortgage with a 10%, 15% or 20% loan-to-value (referred to as 80-10-10, 80-15-5 or 80-20 loans, respectively) rather than a first mortgage with a 90%, 95% or 100% loan-to-value that has mortgage insurance.

Arch MI U.S. and other private mortgage insurers increasingly compete with well capitalized multiline reinsurers and capital

markets alternatives to private mortgage insurance. In 2016, the GSEs expanded their respective mortgage credit risk transfer programs, which led to increased opportunities for multiline property/casualty reinsurers (including, among others, PartnerRe Ltd., Transatlantic Reinsurance Company, Everest Re Group Ltd. and RenaissanceRe Holdings Ltd.) and capital markets participants. Certain primary mortgage insurers use reinsurance as a form of capital relief. This has attracted additional reinsurers into the market and we are seeing increased competition as a result.

For other U.S. risk sharing products and non-U.S. mortgage insurance opportunities, we have also seen increased competition from well capitalized and highly rated multiline reinsurers. It is our expectation that the depth and capacity of competitors from this segment will continue to increase over the next several years as more credit risk is borne by private capital.

Any alternatives to private mortgage insurance that develop could adversely affect our operations. Any failure by us to effectively compete within and outside the mortgage insurance industry could adversely affect our financial condition and results of operations.

The insurance and reinsurance industry is highly cyclical, and we expect to continue to experience periods characterized by excess underwriting capacity and unfavorable premium rates.

Historically, insurers and reinsurers have experienced significant fluctuations in operating results due to competition, frequency of occurrence or severity of catastrophic events, levels of capacity, general economic conditions, changes in equity, debt and other investment markets, changes in legislation, case law and prevailing concepts of liability and other factors. In particular, demand for reinsurance is influenced significantly by the underwriting results of primary insurers and prevailing general economic conditions. The supply of insurance and reinsurance is related to prevailing prices and levels of surplus capacity that, in turn, may fluctuate in response to changes in rates of return being realized in the insurance and reinsurance industry on both underwriting and investment sides. As a result, the insurance and reinsurance business historically has been a cyclical industry characterized by periods of intense price competition due to excessive underwriting capacity as well as periods when shortages of capacity permitted favorable premium levels and changes in terms and conditions. The supply of insurance and reinsurance has increased over the past several years and may increase further, either as a result of capital provided by new entrants or by the commitment of additional capital by existing insurers or reinsurers. Continued increases in the supply of insurance and reinsurance may have consequences for us, including fewer contracts written, lower premium rates, increased expenses for

customer acquisition and retention, and less favorable policy terms and conditions.

Claims for catastrophic events could cause large losses and substantial volatility in our results of operations and could have a material adverse effect on our financial position and results of operations. As a result, the value of our securities, including our common shares and preferred shares, may fluctuate widely.

We have large aggregate exposures to natural and man-made catastrophic events. Catastrophes can be caused by various events, including hurricanes, floods, tsunamis, windstorms, earthquakes, hailstorms, tornadoes, explosions, severe winter weather, fires, droughts and other natural disasters. Catastrophes can also cause losses in non-property business such as workers' compensation or general liability. In addition to the nature of the property business, we believe that economic and geographic trends affecting insured property, including inflation, property value appreciation and geographic concentration tend to generally increase the size of losses from catastrophic events over time. Actual losses from future catastrophic events may vary materially from estimates due to the inherent uncertainties in making such determinations resulting from several factors, including the potential inaccuracies and inadequacies in the data provided by clients, brokers and ceding companies, the modeling techniques and the application of such techniques, the contingent nature of business interruption exposures, the effects of any resultant demand surge on claims activity and attendant coverage issues.

In addition, over the past several years, changing weather patterns and climatic conditions, such as global warming, have added to the unpredictability and frequency of natural disasters in certain parts of the world and created additional uncertainty as to future trends and exposures. Although the loss experience of catastrophe insurers and reinsurers has historically been characterized as low frequency, there is a growing consensus today that climate change increases the frequency and severity of extreme weather events and, in recent years, the frequency of major catastrophes appears to have increased. Claims for catastrophic events, or an unusual frequency of smaller losses in a particular period, could expose us to large losses and cause substantial volatility in our results of operations, which could have a material adverse effect on our ability to write new business and cause the value of our securities, including our common shares and preferred shares, to fluctuate widely.

We could face unanticipated losses from war, terrorism and political instability, and these or other unanticipated losses could have a material adverse effect on our financial condition and results of operations.

We have substantial exposure to unexpected, large losses resulting from future man-made catastrophic events, such as acts of war, acts of terrorism and political instability. These risks are inherently unpredictable. It is difficult to predict the timing

of such events with statistical certainty or estimate the amount of loss any given occurrence will generate. In certain instances, we specifically insure and reinsure risks resulting from acts of terrorism. Even in cases where we attempt to exclude losses from terrorism and certain other similar risks from some coverages written by us, we may not be successful in doing so. Moreover, irrespective of the clarity and inclusiveness of policy language, there can be no assurance that a court or arbitration panel will not limit enforceability of policy language or otherwise issue a ruling adverse to us. Accordingly, while we believe our reinsurance programs, together with the coverage provided under the Terrorism Risk Insurance Act of 2002, as amended under the Terrorism Risk Insurance Extension Act of 2005 and the Terrorism Risk Insurance Program Reauthorization Act of 2007, and amended and extended again by the Terrorism Risk Insurance Program Reauthorization Act of 2015 ("TRIPRA"), are sufficient to reasonably limit our net losses relating to potential future terrorist attacks, we can offer no assurance that our available capital will be adequate to cover losses when they materialize. To the extent that an act of terrorism is certified by the Secretary of the Treasury and aggregate industry insured losses resulting from the act of terrorism exceeds the prescribed program trigger, our U.S. insurance operations may be covered under TRIPRA for up to 83% for 2017, 82% for 2018, 81% for 2019 and 80% for 2020, in each case subject to a mandatory deductible of 20% of our prior year's direct earned premium for covered property and liability coverages. The program trigger for calendar year 2017 is \$140 million and will increase by \$20 million per year until it becomes \$200 million in 2020. If an act (or acts) of terrorism result in covered losses exceeding the \$100 billion annual limit, insurers with losses exceeding their deductibles will not be responsible for additional losses. It is not possible to completely eliminate our exposure to unforecasted or unpredictable events, and to the extent that losses from such risks occur, our financial condition and results of operations could be materially adversely affected.

The insurance and reinsurance industry is subject to regulatory and legislative initiatives or proposals from time to time which could adversely affect our business.

From time to time, various regulatory and legislative changes have been proposed in the insurance and reinsurance industry. Among the proposals that are at present being considered are the possible introduction of global regulatory standards for the amount of capital that insurance groups must maintain across the group.

The extreme turmoil in the financial markets has increased the likelihood of changes in the way the financial services industry is regulated. Governmental authorities in the U.S. and worldwide have become increasingly interested in potential risks posed by the insurance industry as a whole, and to commercial and financial systems in general. While we cannot predict the exact nature, timing or scope of possible

governmental initiatives, there may be increased regulatory intervention in our industry in the future. For example, the U.S. federal government has increased its scrutiny of the insurance regulatory framework in recent years, and some state legislators have considered or enacted laws that will alter and likely increase state regulation of insurance and reinsurance companies and holding companies. Moreover, the National Association of Insurance Commissioners (“NAIC”), which is an association of the insurance commissioners of all 50 states and the District of Columbia, regularly reexamines existing laws and regulations. There are also a variety of proposals being considered by various state legislatures.

A new European solvency framework and prudential regime for insurers and reinsurers, under the Solvency II Directive 2009/138/EC (“Solvency II”), took effect in full on January 1, 2016. Solvency II imposes economic risk-based solvency requirements across all member states (“Member State”) of the European Union (“EU”) and consists of three pillars: Pillar I—quantitative capital requirements, based on a valuation of the entire balance sheet; Pillar II—qualitative regulatory review, which includes governance, internal controls, enterprise risk management and supervisory review process; and Pillar III—market discipline, which is accomplished through reporting of the insurer’s financial condition to regulators and the public. Solvency II is supplemented by European Commission Delegated Regulation (EU) 2015/35 (the “Delegated Regulation”), other European Commission “delegated acts” and binding technical standards, and guidelines issued by European Insurance and Occupational Pensions Authority. The Delegated Regulation sets out more detailed requirements for individual insurance and reinsurance undertakings, as well as for groups, based on the overarching provisions of Solvency II, which together make up the core of the single prudential rulebook for insurance and reinsurance undertakings in the EU. Solvency II imposes significant requirements for our EU-based regulated companies which require substantial documentation and implementation effort.

The Bermuda Monetary Authority has also implemented and imposed additional requirements on the companies it regulates, such as Arch Re Bermuda, driven, in large part, by Solvency II. The European Commission has adopted a decision concluding that Bermuda meets the full equivalence criteria under Solvency II, which became effective on January 1, 2016.

The U.S. mortgage insurance industry is subject to substantial federal and state regulation, which has increased in recent years. The U.S. mortgage insurance industry is also subject to increased federal and state regulatory scrutiny (including by state insurance regulatory authorities), which could generate new regulations, regulatory actions or investigations. Failure to comply with federal and state regulations promulgated by federal consumer protection authorities and state insurance regulatory authorities could lead to enforcement or disciplinary

action, including the imposition of penalties and the revocation of our authorization to operate.

Underwriting risks and reserving for losses are based on probabilities and related modeling, which are subject to inherent uncertainties.

Our success is dependent upon our ability to assess accurately the risks associated with the businesses that we insure and reinsure. We establish reserves for losses and loss adjustment expenses which represent estimates involving actuarial and statistical projections, at a given point in time, of our expectations of the ultimate settlement and administration costs of losses incurred. We utilize actuarial models as well as available historical insurance industry loss ratio experience and loss development patterns to assist in the establishment of loss reserves. Most or all of these factors are not directly quantifiable, particularly on a prospective basis, and the effects of these and unforeseen factors could negatively impact our ability to accurately assess the risks of the policies that we write. Changes in the assumptions used by these models or by management could lead to an increase in our estimate of ultimate losses in the future. In addition, there may be significant reporting lags between the occurrence of the insured event and the time it is actually reported to the insurer and additional lags between the time of reporting and final settlement of claims. Unfavorable development in any of these factors could cause the level of reserves to be inadequate. In addition, the estimation of loss reserves is also more difficult during times of adverse economic and market conditions due to unexpected changes in behavior of claimants and policyholders, including an increase in fraudulent reporting of exposures and/or losses, reduced maintenance of insured properties or increased frequency of small claims. Changes in the level of inflation also result in an increased level of uncertainty in our estimation of loss reserves. As a result, actual losses and loss adjustment expenses paid will deviate, perhaps substantially, from the reserve estimates reflected in our financial statements.

If our loss reserves are determined to be inadequate, we will be required to increase loss reserves at the time of such determination with a corresponding reduction in our net income in the period in which the deficiency becomes known. It is possible that claims in respect of events that have occurred could exceed our claim reserves and have a material adverse effect on our results of operations, in a particular period, or our financial condition in general. As a compounding factor, although most insurance contracts have policy limits, the nature of property and casualty insurance and reinsurance is such that losses can exceed policy limits for a variety of reasons and could significantly exceed the premiums received on the underlying policies, thereby further adversely affecting our financial condition.

As of December 31, 2016, our consolidated reserves for unpaid losses and loss adjustment expenses, net of unpaid losses and loss adjustment expenses recoverable, were approximately \$8.12 billion. Such reserves were established in accordance with applicable insurance laws and U.S. generally accepted accounting principles ("U.S. GAAP"). Loss reserves are inherently subject to uncertainty. In establishing the reserves for losses and loss adjustment expenses, we have made various assumptions relating to the pricing of our reinsurance contracts and insurance policies and have also considered available historical industry experience and current industry conditions. Any estimates and assumptions made as part of the reserving process could prove to be inaccurate due to several factors, including the fact that relatively limited historical information has been reported to us through December 31, 2016.

In accordance with mortgage insurance industry practice, we establish loss reserves only for loans in our existing default inventory. Because our mortgage insurance reserving process does not take account of the impact of future losses from loans that are not in default, mortgage insurance loss reserves are not intended to be an estimate of total future losses. Our expectation of total future losses under our mortgage insurance policies in force at any period end is not reflected in our financial statements. In addition to establishing loss reserves for loans in default, under U.S. GAAP, we are required to establish a premium deficiency reserve for our mortgage insurance products if the amount of expected future losses for a particular product and maintenance costs for such product exceeds expected future premiums, existing reserves and the anticipated investment income. We evaluate whether a premium deficiency exists quarterly. There can be no assurance that premium deficiency reserves will not be required in future periods. If this were to occur, our results of operations and financial condition could be adversely affected.

The failure of any of the loss limitation methods we employ could have a material adverse effect on our financial condition or results of operations.

We seek to limit our loss exposure by writing a number of our reinsurance contracts on an excess of loss basis, adhering to maximum limitations on reinsurance written in defined geographical zones, limiting program size for each client and prudent underwriting of each program written. In the case of proportional treaties, we may seek per occurrence limitations or loss ratio caps to limit the impact of losses from any one or series of events. In our insurance operations, we seek to limit our exposure through the purchase of reinsurance. We cannot be certain that any of these loss limitation methods will be effective. We also seek to limit our loss exposure by geographic diversification. Geographic zone limitations involve significant underwriting judgments, including the determination of the area of the zones and the inclusion of a particular policy within a particular zone's limits. There can be no assurance that various provisions of our policies, such as limitations or exclusions

from coverage or choice of forum, will be enforceable in the manner we intend, as it is possible that a court or regulatory authority could nullify or void an exclusion or limitation, or legislation could be enacted modifying or barring the use of these exclusions and limitations. Disputes relating to coverage and choice of legal forum may also arise. Underwriting is inherently a matter of judgment, involving important assumptions about matters that are inherently unpredictable and beyond our control, and for which historical experience and probability analysis may not provide sufficient guidance. One or more catastrophic or other events could result in claims that substantially exceed our expectations, or the protections set forth in our policies could be voided, which, in either case, could have a material adverse effect on our financial condition or our results of operations, possibly to the extent of eliminating our shareholders' equity.

For our natural catastrophe exposed business, we seek to limit the amount of exposure we will assume from any one insured or reinsured and the amount of the exposure to catastrophe losses from a single event in any geographic zone. We monitor our exposure to catastrophic events, including earthquake and wind, and periodically reevaluate the estimated probable maximum pre-tax loss for such exposures. Our estimated probable maximum pre-tax loss is determined through the use of modeling techniques, but such estimate does not represent our total potential loss for such exposures. Our models employ both proprietary and vendor-based systems and include cross-line correlations for property, marine, offshore energy, aviation, workers compensation and personal accident. We seek to limit the probable maximum pre-tax loss to a specific level for severe catastrophic events. Currently, we seek to limit our 1-in-250 year return period net probable maximum loss from a severe catastrophic event in any geographic zone to approximately 25% of total shareholders' equity. We reserve the right to change this threshold at any time. Net probable maximum loss estimates are net of expected reinsurance recoveries, before income tax and before excess reinsurance reinstatement premiums. Loss estimates are reflective of the zone indicated and not the entire portfolio. Since hurricanes and windstorms can affect more than one zone and make multiple landfalls, our loss estimates include clash estimates from other zones. Our loss estimates do not represent our maximum exposures and it is highly likely that our actual incurred losses would vary materially from the modeled estimates. There can be no assurances that we will not suffer pre-tax losses greater than 25% of our total shareholders' equity from one or more catastrophic events due to several factors, including the inherent uncertainties in estimating the frequency and severity of such events and the margin of error in making such determinations resulting from potential inaccuracies and inadequacies in the data provided by clients and brokers, the modeling techniques and the application of such techniques or as a result of a decision to change the percentage of shareholders' equity exposed to a single catastrophic event. Catastrophe modeling utilizes a mix

of historical data, scientific theory and mathematical methods. We believe that there is considerable uncertainty in the data and parameter inputs for insurance industry catastrophe models. In that regard, there is no universal standard in the preparation of insured data for use in the models and the running of modeling software. In our view, the accuracy of the models depends heavily on the availability of detailed insured loss data from actual recent large catastrophes. Due to the limited number of events, there is significant potential for substantial differences between the modeled loss estimate and actual company experience for a single large catastrophic event. This potential difference could be even greater for perils with less modeled annual frequency, such as a U.S. earthquake, or less modeled annual severity, such as a European windstorm. We are also reliant upon third-party estimates of industry insured exposures, and there is significant variation possible around the relationship between our loss and that of the industry following a catastrophic event. In addition, actual losses may increase if our reinsurers fail to meet their obligations to us or the reinsurance protections purchased by us are exhausted or are otherwise unavailable. See “Risk Factors—Risks Relating to Our Industry” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Natural and Man-Made Catastrophic Events.” Depending on business opportunities and the mix of business that may comprise our insurance and reinsurance portfolio, we may seek to adjust our self-imposed limitations on probable maximum pre-tax loss for catastrophe exposed business.

Adverse developments in the financial markets could have a material adverse effect on our results of operations, financial position and our businesses, and may also limit our access to capital; our policyholders, reinsurers and retrocessionaires may also be affected by such developments, which could adversely affect their ability to meet their obligations to us.

Adverse developments in the financial markets, such as disruptions, uncertainty or volatility in the capital and credit markets, may result in realized and unrealized capital losses that could have a material adverse effect on our results of operations, financial position and our businesses, and may also limit our access to capital required to operate our business. Depending on market conditions, we could incur additional realized and unrealized losses on our investment portfolio in future periods, which could have a material adverse effect on our results of operations, financial condition and business. Economic conditions could also have a material impact on the frequency and severity of claims and therefore could negatively impact our underwriting returns. In addition, our policyholders, reinsurers and retrocessionaires may be affected by developments in the financial markets, which could adversely affect their ability to meet their obligations to us. The volatility in the financial markets could continue to significantly affect our investment returns, reported results and shareholders’ equity.

Market developments and government actions regarding the sovereign debt crisis in Europe, particularly in Portugal, Ireland, Italy, Greece and Spain, could have a material adverse effect on our business, financial condition, results of operations and liquidity.

The global recession and disruption of the financial markets has led to concerns over access to capital markets and the solvency of EU Member States, including Portugal, Ireland, Italy, Greece and Spain and of financial institutions that have significant direct or indirect exposure to debt issued by, or the economies of, these countries. As of December 31, 2016, our investment portfolio does not contain significant investments in government bonds issued by Portugal, Ireland, Italy, Greece and Spain or in financial institutions that have significant direct or indirect exposure to debt issued by, or the economies of, those countries. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Financial Condition, Liquidity and Capital Resources—Financial Condition—Investable Assets.” The continued uncertainty over the outcome of international financial support programs and the possibility that EU Member States may experience similar financial troubles could further disrupt global markets. Rating agency downgrades on certain European sovereign debt, as well as downgrades on certain European financial institutions, and growing concern of the potential default of government issuers or of a possible withdrawal by one or more EU Member States from the Eurozone and/or a break-up of the EU has further contributed to this uncertainty.

The United Kingdom’s referendum vote in favor of leaving the EU could adversely affect us.

At a referendum in June 2016, a majority of voting U.K. citizens voted in favor of the U.K. leaving the EU (“Brexit”). It is expected that the U.K. government will invoke Article 50 of the Treaty on European Union (“Article 50”) to withdraw from the EU by the end of March 2017. There is a significant degree of uncertainty regarding how negotiations relating to the U.K.’s withdrawal and its future relationship with the EU will be conducted, as well as the potential consequences of and precise time-frame for such withdrawal and negotiations of its future relationship with the EU and any transitional measures that may apply. It is expected that the U.K.’s withdrawal from the EU will take place within two years of the U.K. government invoking Article 50. During this period and beyond, the impact of the U.K.’s withdrawal on the U.K. and European economies and the broader global economy could be significant, resulting in negative consequences, such as increased volatility and illiquidity, and potentially lower economic growth in various markets in the U.K., Europe and globally and could continue to contribute to instability in global financial and foreign exchange markets. Brexit could also have the effect of disrupting the free movement of goods, services and people between the U.K. and the EU. We anticipate that Brexit may disrupt our U.K. domiciled entities, including our Lloyd’s

syndicate, and their ability to “passport” within the EU. Similarly, Brexit may disrupt the ability of our EU domiciled entities to access the U.K. markets. The full effects of Brexit are uncertain and will depend on any agreements the U.K. may make to retain access to EU markets.

The negative impact of these events on economic conditions and global markets could have an adverse effect on our business, financial condition and liquidity. For example, this crisis may cause the value of the European currencies, including the Euro and the British Pound Sterling, to further depreciate against the U.S. Dollar, which in turn could materially adversely impact assets denominated in such currencies held in our investment portfolio or results of our European book of business. In addition, the applicable legal framework and the terms of our Euro-denominated insurance policies and reinsurance agreements generally do not address withdrawal by a member state from the Eurozone or a break-up of the EU, which could create uncertainty in our payment obligations and rights under those policies and agreements in the event that such a withdrawal or break-up does occur.

Additionally, a contagion effect of a possible default of one or more EU Member States and/or their withdrawal from the Eurozone, or the failure of financial institutions, on the global economy, including other EU Member States and our counterparties located in those countries, or a break-up of the EU could have a material adverse effect on our business, financial condition, results of operations and liquidity. As a result of Brexit, other European countries may seek to conduct referenda with respect to their continuing membership with the EU. Given these possibilities and others we may not anticipate, as well as the lack of comparable precedent, the full extent to which our business, results of operations and financial condition could be adversely affected by Brexit is uncertain.

The risk associated with underwriting treaty reinsurance business could adversely affect us.

Like other reinsurers, our reinsurance group does not separately evaluate each of the individual risks assumed under reinsurance treaties. Therefore, we are largely dependent on the original underwriting decisions made by ceding companies. We are subject to the risk that the ceding companies may not have adequately evaluated the risks to be reinsured and that the premiums ceded may not adequately compensate us for the risks we assume.

While reinsurance and retrocessional coverage will be used to limit our exposure to risks, the availability of such arrangements may be limited, and counterparty credit and other risks associated with our reinsurance arrangements may result in losses which could adversely affect our financial condition and results of operations.

For the purposes of managing risk, we use reinsurance and also may use retrocessional arrangements. In the normal course of business, our insurance subsidiaries cede a portion of their premiums through pro rata, excess of loss and facultative reinsurance agreements. Our reinsurance subsidiaries purchase a limited amount of retrocessional coverage as part of their aggregate risk management program. In addition, our reinsurance subsidiaries participate in “common account” retrocessional arrangements for certain pro rata treaties. Such arrangements reduce the effect of individual or aggregate losses to all companies participating on such treaties, including the reinsurers, such as our reinsurance subsidiaries, and the ceding company. The availability and cost of reinsurance and retrocessional protection is subject to market conditions, which are beyond our control. As a result of such market conditions and other factors, we may not be able to successfully mitigate risk through reinsurance and retrocessional arrangements.

Further, we are subject to credit risk with respect to our reinsurance and retrocessions because the ceding of risk to reinsurers and retrocessionaires does not relieve us of our liability to the clients or companies we insure or reinsure. We monitor the financial condition of our reinsurers and attempt to place coverages only with carriers we view as substantial and financially sound. Although we have not experienced any material credit losses to date, an inability of our reinsurers or retrocessionaires to meet their obligations to us could have a material adverse effect on our financial condition and results of operations. Our losses for a given event or occurrence may increase if our reinsurers or retrocessionaires dispute or fail to meet their obligations to us or the reinsurance or retrocessional protections purchased by us are exhausted or are otherwise unavailable for any reason. Our failure to establish adequate reinsurance or retrocessional arrangements or the failure of our existing reinsurance or retrocessional arrangements to protect us from overly concentrated risk exposure could adversely affect our financial condition and results of operations.

Our reliance on brokers subjects us to their credit risk.

In accordance with industry practice, we generally pay amounts owed on claims under our insurance and reinsurance contracts to brokers, and these brokers, in turn, pay these amounts to the clients that have purchased insurance or reinsurance from us. In some jurisdictions, if a broker fails to make such payment, we may remain liable to the insured or ceding insurer for the deficiency. Likewise, in certain jurisdictions, when the insured or ceding company pays the premiums for these contracts to brokers for payment to us, these premiums are considered to

have been paid and the insured or ceding company will no longer be liable to us for those amounts, whether or not we have actually received the premiums from the broker. Consequently, we assume a degree of credit risk associated with our brokers. To date, we have not experienced any losses related to this credit risk.

Unexpected political legislative or judicial developments related to coverage may adversely affect us.

The effects of emerging claims and coverage issues are uncertain. The insurance industry is also affected by political, judicial and legal developments that have in the past resulted in new or expanded theories of liability. These or other changes could impose new financial obligations on us by extending coverage beyond our underwriting intent or otherwise require us to make unplanned modifications to the products and services that we provide, or cause the delay or cancellation of products and services that we provide. In some instances, these changes may not become apparent until sometime after we have issued insurance or reinsurance contracts that are affected by the changes. As a result, the full extent of liability under our insurance or reinsurance contracts may not be known for many years after a contract is issued. The effects of unforeseen developments or substantial government intervention could adversely impact our ability to achieve our goals.

The insurance businesses in which we operate may be subject to periodic negative publicity which may negatively impact our financial results.

Our products and services are ultimately distributed to individual and business customers. From time to time, consumer advocacy groups or the media may focus attention on insurance products and services, thereby subjecting the industry to periodic negative publicity. We also may be negatively impacted if competitors in one or more of our markets engage in practices resulting in increased public attention to our business. These factors may further increase our costs of doing business and adversely affect our profitability by impeding our ability to market our products and services, requiring us to change our products or services or by increasing the regulatory burdens under which we operate.

Changes in current accounting practices and future pronouncements may materially impact our reported financial results.

Developments in accounting practices may require considerable additional expense to comply with, particularly if we are required to prepare information relating to prior periods for comparable purposes or to apply the new requirements retroactively. The impact of changes in current accounting practices and future pronouncements cannot be predicted, but may affect the results of our operations, including among other things, the calculation of net income.

Risks Relating to Our Company

The UGC acquisition, as well as any future acquisitions, growth of our operations through the addition of new lines of insurance or reinsurance business through our existing subsidiaries or through the formation of new subsidiaries, expansion into new geographic regions and/or joint ventures or partnerships expose us to risks.

We may in the future make acquisitions either of other companies or selected blocks of business, expand our business lines or enter into joint ventures. The UGC acquisition, as well as any future acquisitions, may expose us to challenges and risks, including: integrating financial and operational reporting systems and establishing satisfactory budgetary and other financial controls; funding increased capital needs, overhead expenses or cash flow shortages that may occur if anticipated sales and revenues are not realized or are delayed, whether by general economic or market conditions or unforeseen internal difficulties; obtaining management personnel required for expanded operations; obtaining necessary regulatory permissions; the value of assets acquired may be lower than expected or may diminish due to credit defaults or changes in interest rates and liabilities assumed may be greater than expected; the assets and liabilities we may acquire may be subject to foreign currency exchange rate fluctuation; and financial exposures in the event that the sellers of the entities we acquire are unable or unwilling to meet their indemnification, reinsurance and other obligations to us.

Our failure to manage successfully these operational challenges and risks may impact our results of operations. In addition, if the reserves established by us, as they relate to any acquired book of business, prove to be inadequate, then subject to whatever recourse we may have against the seller or reinsurers, we may be responsible for adverse development in such reserves.

We may fail to realize the growth prospects and other benefits anticipated as a result of the UGC acquisition.

The success of the UGC acquisition will depend, in part, on our ability to realize the anticipated business opportunities and growth prospects from acquiring UGC. We may never realize these business opportunities and growth prospects. Integrating UGC will require significant efforts and expenditures. Our management might have its attention diverted while trying to integrate operations and corporate and administrative infrastructures and the cost of integration may exceed our expectations. We may also be required to make unanticipated capital expenditures or investments in order to maintain, improve or sustain the acquired operations or take writeoffs or impairment charges and may be subject to unanticipated or unknown liabilities relating to UGC. We might experience increased competition that limits our ability to expand our business, and we might not be able to capitalize on expected

business opportunities. It is possible that, we may determine to reduce certain types of businesses that UGC currently writes, which may result in lower revenues for us in the future. If any of these factors limit our ability to integrate UGC successfully or on a timely basis, the expectations of our future results of operations might not be met.

It is possible that the integration process could result in the loss of key employees, the disruption of each company's ongoing businesses, tax costs or inefficiencies, or inconsistencies in standards, controls, information technology systems, procedures and policies, any of which could adversely affect our ability to achieve the anticipated benefits of the UGC acquisition and could harm our financial performance

The UGC acquisition may expose us to unknown liabilities.

Because we acquired all the outstanding equity interests of UGC, our acquisition will generally be subject to all of UGC's liabilities. If there are unknown liabilities or other obligations, including contingent liabilities, our business could be materially affected. We may learn additional information about UGC that adversely affects us, such as unknown liabilities, issues that could affect our ability to comply with the Sarbanes-Oxley Act or issues that could affect our ability to comply with other applicable laws.

The ultimate performance of the Arch MI U.S. mortgage insurance portfolio remains uncertain.

Arch MI U.S. had risk in force inclusive of the UGC acquisition of approximately \$59.7 billion, before external reinsurance, as of December 31, 2016, including \$7.6 billion of risk in force originated in 2008 and prior. The presence of multiple higher-risk characteristics in a loan materially increases the likelihood of a claim on such a loan unless there are other characteristics to mitigate the risk. The mix of business in our insured loan portfolio may affect losses and remain uncertain.

The frequency and severity of claims we incur will be uncertain and will depend largely on general economic factors outside of our control, including, among others, changes in unemployment, home prices and interest rates in the U.S. Deteriorating economic conditions in the U.S. could adversely affect the performance of our acquired U.S. mortgage insurance portfolio and could adversely affect our results of operations and financial condition.

Generally, we cannot cancel mortgage insurance coverage or adjust renewal premiums during the life of a mortgage insurance policy. As a result, higher than anticipated claims generally cannot be offset by premium increases on policies in force or mitigated by our non-renewal or cancellation of insurance coverage. The premiums charged on the acquired UGC insured loan portfolio, and the associated investment income, may not

be adequate to compensate us for the risks and costs associated with the insurance coverage provided to customers.

We have incurred, and may continue to incur, acquisition-related integration costs in connection with the UGC acquisition which may be significant.

We are integrating UGC with our existing mortgage operations. Although we anticipate achieving synergies in connection with the UGC acquisition, we also expect to incur costs to implement such cost savings measures. We cannot identify the timing, nature and amount of all such charges as of the date of this report. The significant transaction costs and acquisition-related integration costs could materially adversely affect our results of operations in the period in which such charges are recorded or our cash flow in the period in which any related costs are actually paid. Although we believe that the elimination of duplicative costs, as well as the realization of other efficiencies related to the integration of UGC, will offset incremental transaction and acquisition-related costs over time, this net benefit may not be achieved in the near term, or at all. We have identified some, but not all, of the actions necessary to achieve our anticipated cost and operational savings. Accordingly, the cost and operational savings may not be achievable in our anticipated amount or timeframe or at all. Investors should not place undue reliance on the anticipated benefits of the UGC acquisition in making their investment decision.

The preparation of our financial statements requires us to make many estimates and judgments.

The preparation of consolidated financial statements requires us to make many estimates and judgments that affect the reported amounts of assets, liabilities (including reserves), revenues and expenses, and related disclosures of contingent liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, insurance, reinsurance and other reserves, reinsurance recoverables, investment valuations, intangible assets, bad debts, income taxes, contingencies and litigation. We base our estimates on historical experience, where possible, and on various other assumptions that we believe to be reasonable under the circumstances, which form the basis for our judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We employ a number of different reserving methods depending on the segment, the line of business, the availability of historical loss experience and the stability of that loss experience. Over time, we have given additional weight to our historical loss experience in our reserving process due to the continuing maturation of our reserves, and the increased availability and credibility of the historical experience. Actual claims and claim expenses paid may, and likely will, deviate, perhaps substantially, from the reserve estimates reflected in our financial statements.

A downgrade in our ratings or our inability to obtain a rating for our operating insurance and reinsurance subsidiaries may adversely affect our relationships with clients and brokers and negatively impact sales of our products.

Third-party rating agencies, such as A.M. Best, assess and rate the financial strength of insurers and reinsurers based upon criteria established by the rating agencies, which criteria are subject to change. Ratings are an important factor in establishing the competitive position of insurance and reinsurance companies. Insureds, ceding insurers, brokers and reinsurance intermediaries use these ratings as one measure by which to assess the financial strength and quality of insurers and reinsurers. These ratings are often an important factor in the decision by an insured, ceding insurer, broker or intermediary of whether to place business with a particular insurance or reinsurance provider.

The financial strength ratings of our operating insurance and reinsurance subsidiaries are subject to periodic review as rating agencies evaluate us to confirm that we continue to meet their criteria for ratings assigned to us by them. Such ratings may be revised downward or revoked at the sole discretion of such ratings agencies in response to a variety of factors, including a minimum capital adequacy ratio, management, earnings, capitalization and risk profile. Following the closing of the UGC acquisition, all four of the major ratings agencies commented on the financial implications on ACGL. See “Business—Investments, Ratings, Competition, Enterprise Risk Management—Ratings.” We can offer no assurances that our ratings will remain at their current levels or that any of our ratings which under review or watch by ratings agencies will remain unchanged.

A ratings downgrade or the potential for such a downgrade, or failure to obtain a necessary rating, could adversely affect our relationships with agents, brokers, wholesalers, intermediaries, clients and other distributors of our existing products and services, as well as new sales of our products and services. In addition, under certain of the reinsurance agreements assumed by our reinsurance operations, upon the occurrence of a ratings downgrade or other specified triggering event with respect to our reinsurance operations, such as a reduction in surplus by specified amounts during specified periods, our ceding company clients may be provided with certain rights, including, among other things, the right to terminate the subject reinsurance agreement and/or to require that our reinsurance operations post additional collateral. Any ratings downgrade or failure to obtain a necessary rating could adversely affect our ability to compete in our markets, could cause our premiums and earnings to decrease and have a material adverse impact on our financial condition and results of operations. In addition, a downgrade in ratings of certain of our operating subsidiaries would in certain cases constitute an event of default under our credit facilities. See “Management’s Discussion and Analysis

of Financial Condition and Results of Operations—Contractual Obligations and Commercial Commitments—Letter of Credit and Revolving Credit Facilities” for a discussion of our credit facilities.

In light of the difficulties experienced recently by many financial institutions, including our competitors in the insurance industry, we believe it is possible that rating agencies may heighten the level of scrutiny they apply when analyzing companies in our industry, may increase the frequency and scope of their reviews, may request additional information from the companies that they rate (including additional information regarding the valuation of investment securities held), and may adjust upward the capital and other requirements employed in their models for maintenance of certain rating levels.

Our success will depend on our ability to maintain and enhance effective operating procedures and internal controls and our ERM program.

Operational risk and losses can result from, among other things, fraud, errors, failure to document transactions properly or to obtain proper internal authorization, failure to comply with regulatory requirements, information technology failures, failure to appropriately transition new hires or external events. We continue to enhance our operating procedures and internal controls (including information technology initiatives and controls over financial reporting) to effectively support our business and our regulatory and reporting requirements. Our management does not expect that our disclosure controls or our internal controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. As a result of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons or by collusion of two or more people. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. As a result of the inherent limitations in a cost-effective control system, misstatement due to error or fraud may occur and not be detected. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute,

assurance that our goals are met. Any ineffectiveness in our controls or procedures could have a material adverse effect on our business.

The NAIC has increased its focus on risks within an insurer's holding company system that may pose enterprise risk to the insurer. In 2010, the NAIC adopted amendments to its Model Insurance Holding Company System Regulatory Act and Regulation, which include, among other amendments, a requirement for the ultimate controlling person to file an enterprise risk report. In 2012, the NAIC adopted the ORSA Model Act, which requires domestic insurers to maintain a risk management framework and establishes a legal requirement for domestic insurers to conduct an ORSA in accordance with the NAIC's ORSA Guidance Manual. The ORSA Model Act also provides that, no more than once a year, an insurer's domiciliary regulator may request that an insurer submit an ORSA summary report, or any combination of reports that together contain the information described in the ORSA Guidance Manual, applicable to the insurer and/or the insurance group of which it is a member. We operate within an ERM framework designed to assess and monitor our risks. However, there can be no assurance that we can effectively review and monitor all risks or that all of our employees will operate within the ERM framework. There can be no assurance that our ERM framework will result in us accurately identifying all risks and accurately limiting our exposures based on our assessments.

Our business is dependent upon insurance and reinsurance brokers and intermediaries, and the loss of important broker relationships could materially adversely affect our ability to market our products and services.

We market our insurance and reinsurance products primarily through brokers and intermediaries. We derive a significant portion of our business from a limited number of brokers. During 2016, approximately 14.4% and 13.5% of our gross premiums written were generated from or placed by Aon Corporation and its subsidiaries and Marsh & McLennan Companies and its subsidiaries, respectively. No other broker and no one insured or reinsured accounted for more than 10% of gross premiums written for 2016. Some of our competitors have higher financial strength ratings, offer a larger variety of products, set lower prices for insurance coverage, offer higher commissions and/or have had longer term relationships with the brokers we use than we have. This may adversely impact our ability to attract and retain brokers to sell our insurance products or brokers may increasingly promote products offered by other companies. The failure or inability of brokers to market our insurance products successfully, or loss of all or a substantial portion of the business provided by these brokers could have a material adverse impact on our business, financial condition and results of operations.

We could be materially adversely affected to the extent that managing general agents, general agents and other producers exceed their underwriting authorities or if our agents, our insureds or other third parties commit fraud or otherwise breach obligations owed to us.

For certain business conducted by our insurance group, following our underwriting, financial, claims and information technology due diligence reviews, we authorize managing general agents, general agents and other producers to write business on our behalf within underwriting authorities prescribed by us. In addition, our mortgage group delegates the underwriting of a significant percentage of its primary new insurance written to certain mortgage lenders. Under this delegated underwriting program, the approved customer may determine whether mortgage loans meet our mortgage insurance program guidelines and commit us to issue mortgage insurance. We rely on the underwriting controls of these agents to write business within the underwriting authorities provided by us. Although we monitor such business on an ongoing basis, our monitoring efforts may not be adequate or our agents may exceed their underwriting authorities or otherwise breach obligations owed to us. In addition, our agents, our insureds or other third parties may commit fraud or otherwise breach their obligations to us. To the extent that our agents, our insureds or other third parties exceed their underwriting authorities, commit fraud or otherwise breach obligations owed to us in the future, our financial condition and results of operations could be materially adversely affected.

We are exposed to credit risk in certain of our business operations.

In addition to exposure to credit risk related to our investment portfolio, reinsurance recoverables and reliance on brokers and other agents (each discussed elsewhere in this section), we are exposed to credit risk in other areas of our business related to policyholders. We are exposed to credit risk in our insurance group's surety unit where we guarantee to a third party that our policyholder will satisfy certain performance or financial obligations. If our policyholder defaults, we may suffer losses and be unable to be reimbursed by our policyholder. We are exposed to credit risk in our insurance group's construction and national accounts units where we write large deductible insurance policies. Under these policies, we are typically obligated to pay the claimant the full amount of the claim (shown as "contractholder payables" on our consolidated balance sheets). We are subsequently reimbursed by the policyholder for the deductible amount (shown as "contractholder receivables" on our consolidated balance sheets), which can be a set amount per claim and/or an aggregate amount for all covered claims. As such, we are exposed to credit risk from the policyholder. We are also exposed to credit risk from policyholders on smaller deductibles in other insurance group lines, such as healthcare and excess and surplus casualty. Additionally, we write retrospectively rated policies (*i.e.*,

policies in which premiums are adjusted after the policy period based on the actual loss experience of the policyholder during the policy period). In this instance, we are exposed to credit risk to the extent the adjusted premium is greater than the original premium. While we generally seek to mitigate this risk through collateral agreements that require the posting of collateral in such forms as cash and letters of credit from banks, our efforts to mitigate the credit risk that we have to our policyholders may not be successful. Although we have not experienced any material credit losses to date, an increased inability of our policyholders to meet their obligations to us could have a material adverse effect on our financial condition and results of operations.

Our investment performance may affect our financial results and ability to conduct business.

Our operating results depend in part on the performance of our investment portfolio. A significant portion of cash and invested assets held by Arch consists of fixed maturities (77.9% as of December 31, 2016). Although our current investment guidelines and approach stress preservation of capital, market liquidity and diversification of risk, our investments are subject to market-wide risks and fluctuations. In addition, we are subject to risks inherent in particular securities or types of securities, as well as sector concentrations. Changing market conditions could materially affect the future valuation of securities in our investment portfolio, which could cause us to impair some portion of those securities. We may not be able to realize our investment objectives, which could have a material adverse effect on our financial results. In the event that we are unsuccessful in correlating our investment portfolio with our expected insurance and reinsurance liabilities, we may be forced to liquidate our investments at times and prices that are not optimal, which could have a material adverse effect on our financial results and ability to conduct our business.

Foreign currency exchange rate fluctuation may adversely affect our financial results.

We write business on a worldwide basis, and our results of operations may be affected by fluctuations in the value of currencies other than the U.S. Dollar. The primary foreign currencies in which we operate are the Euro, the British Pound Sterling and the Canadian Dollar. Changes in foreign currency exchange rates can reduce our revenues, increase our liabilities and costs and cause fluctuations in the valuation of our investment portfolio. We may therefore suffer losses solely as a result of exchange rate fluctuations. In order to mitigate our exposure to foreign currency fluctuations in our net insurance liabilities, we have invested and expect to continue to invest in securities denominated in currencies other than the U.S. Dollar. In addition, we may replicate investment positions in foreign currencies using derivative financial instruments. Net foreign exchange gains, excluding amounts reflected in the 'other' segment and recorded in the statement of income, were \$31.4

million for 2016, compared to gains of \$62.6 million for 2015 and \$82.7 million for 2014. Changes in the value of investments due to foreign currency rate movements are reflected as a direct increase or decrease to shareholders' equity and are not included in the statement of income. We have chosen not to hedge certain currency risks on capital contributed to certain subsidiaries, including to Arch Insurance Europe held in British Pound Sterling, and may continue to choose not to hedge our currency risks. There can be no assurances that arrangements to match projected liabilities in foreign currencies with investments in the same currencies or derivative financial instruments will mitigate the negative impact of exchange rate fluctuations, and we may suffer losses solely as a result of exchange rate fluctuations.

We may be adversely affected by changes in economic conditions, including interest rate changes.

Our operating results are affected by, and we are exposed to, significant financial and capital markets risk, including changes in interest rates, real estate values, foreign currency exchange rates, market volatility, the performance of the economy in general, the performance of our investment portfolio and other factors outside our control. Interest rates are highly sensitive to many factors, including the fiscal and monetary policies of the U.S. and other major economies, inflation, economic and political conditions and other factors beyond our control. Although we attempt to take measures to manage the risks of investing in changing interest rate environments, we may not be able to mitigate interest rate sensitivity effectively. Despite our mitigation efforts, an increase in interest rates could have a material adverse effect on our book value.

In addition, our investment portfolio includes residential mortgage backed securities ("RMBS"). As of December 31, 2016, RMBS constituted approximately 2.7% of cash and invested assets held by Arch. As with other fixed income investments, the fair value of these securities fluctuates depending on market and other general economic conditions and the interest rate environment. Changes in interest rates can expose us to changes in the prepayment rate on these investments. In periods of declining interest rates, mortgage prepayments generally increase and MBS are prepaid more quickly, requiring us to reinvest the proceeds at the then current market rates. Conversely, in periods of rising rates, mortgage prepayments generally fall, preventing us from taking full advantage of the higher level of rates. However, economic conditions may curtail prepayment activity if refinancing is difficult, thus limiting prepayments on RMBS.

The residential mortgage market in the U.S has experienced a variety of difficulties in certain underwriting periods and is only recently recovering from a period of severe home price depreciation. It is uncertain whether this recovery will continue. A decline or an extended flattening in residential property values may result in additional increases in delinquencies and

losses on residential mortgage loans generally, especially with respect to any residential mortgage loans where the aggregate loan amounts (including any subordinate loans) are close to or greater than the related property values. These developments may have a significant adverse effect on the prices of loans and securities, including those in our investment portfolio. The situation continues to have wide ranging consequences, including downward pressure on economic growth and the potential for increased insurance and reinsurance exposures, which could have an adverse impact on our results of operations, financial condition, business and operations.

Mortgage insurance losses result when a borrower becomes unable to continue to make mortgage payments and the home of such borrower cannot be sold for an amount that covers unpaid principal and interest and the expenses of the sale. Deteriorating economic conditions increase the likelihood that borrowers will have insufficient income to pay their mortgages and can adversely affect housing values. In addition, natural disasters or other catastrophic events could result in increased claims if such events adversely affected the employment and income of borrowers and the value of homes. Any of these events or deteriorating economic conditions could cause our mortgage insurance losses to increase and adversely affect our results of operations and financial condition.

Our portfolio includes commercial mortgage backed securities (“CMBS”). At December 31, 2016, CMBS constituted approximately 2.9% of cash and invested assets held by Arch. The commercial real estate market may experience price deterioration, which could lead to delinquencies and losses on commercial real estate mortgages.

Also, in each year, a significant portion of our mortgage insurance premiums will be from mortgage insurance written in prior years. Accordingly, the length of time insurance remains in force, referred to as persistency, is a significant driver of mortgage insurance revenues. Factors affecting persistency include: current mortgage interest rates compared to those rates on mortgages subject to our insurance in force, which affects the likelihood of the insurance in force to be subject to lapse due to borrower refinancing; the amount of home equity, as homeowners with more equity in their homes can generally more readily move to a new residence or refinance their existing mortgage; and mortgage insurance cancellation policies of mortgage investors and the cancellation of borrower-paid mortgage insurance, either upon request of the borrower or as required by law based upon the amortization of the loan. If these or other factors cause the length of time our mortgage insurance policies remain in force to decline, our mortgage insurance revenues could be adversely affected.

Significant, continued volatility in financial markets, changes in interest rates, a lack of pricing transparency, decreased market liquidity, declines in equity prices and the strengthening or weakening of foreign currencies against the U.S. Dollar,

individually or in tandem, could have a material adverse effect on our results of operations, financial condition or cash flows through realized losses, impairments and changes in unrealized positions.

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

On a quarterly basis, we perform reviews of our investments to determine whether declines in fair value below the cost basis are considered other-than-temporary in accordance with applicable accounting guidance regarding the recognition and presentation of other-than-temporary impairments. The process of determining whether a security is other-than-temporarily impaired requires judgment and involves analyzing many factors. These factors include: an analysis of the liquidity, business prospects and overall financial condition of the issuer; the time period in which there was a significant decline in value; the significance of the decline; and the analysis of specific credit events. We evaluate the unrealized losses of our equity securities by issuer and determine if we can forecast a reasonable period of time by which the fair value of the securities would increase and we would recover our cost. If we are unable to forecast a reasonable period of time in which to recover the cost of our equity securities, we record a net impairment loss in earnings equivalent to the entire unrealized loss. There can be no assurance that our management has accurately assessed the level of impairments taken and allowances reflected in our financial statements. Furthermore, additional impairments may need to be taken or allowances provided for in the future. Historical trends may not be indicative of future impairments or allowances.

Certain of our investments are illiquid and are difficult to sell, or to sell in significant amounts at acceptable prices, to generate cash to meet our needs.

Our investments in certain securities, including certain fixed income and structured securities, investments in funds accounted for using the equity method, other alternative investments and strategic investments in joint ventures such as Watford Re and others, may be illiquid due to contractual provisions or investment market conditions. If we require significant amounts of cash on short notice in excess of anticipated cash requirements, then we may have difficulty selling these investments in a timely manner or may be forced to sell or terminate them at unfavorable values.

The price of our common shares may be volatile.

There has been significant volatility in the market for equity securities. During 2016 and 2015, the price of our common shares fluctuated from a low of \$59.83 to a high of \$88.41 and from a low of \$57.67 to a high of \$78.81, respectively. On

February 24, 2017, our common shares closed at a price of \$94.54. The price of our common shares may not remain at or exceed current levels. The following factors, in addition to those described in other risk factors above and below, may have an adverse impact on the market price of our common stock: actual or anticipated variations in our quarterly results, including as a result of catastrophes or our investment performance; our share repurchase program; changes in market valuation of companies in the insurance and reinsurance industry; changes in expectations of future financial performance or changes in estimates of securities analysts; fluctuations in stock market processes and volumes; issuances or sales of common shares or other securities in the future (including the potential issuance of 12,762,820 common shares upon conversion of the series D preferred shares following transfer of such shares by AIG to third parties); the addition or departure of key personnel; and announcements by us or our competitors of acquisitions, investments or strategic alliances.

Stock markets in the U.S. continue to experience volatile price and volume fluctuations. Such fluctuations, as well as general political conditions, the current poor economic conditions or interest rate or currency rate fluctuations, could adversely affect the market price of our stock.

We may require additional capital in the future, which may not be available or only available on unfavorable terms.

We monitor our capital adequacy on a regular basis. The capital requirements of our business depend on many factors, including regulatory and rating agency requirements, our ability to write new business successfully and to establish premium rates and reserves at levels sufficient to cover losses. Our ability to underwrite is largely dependent upon the quality of our claims paying and financial strength ratings as evaluated by independent rating agencies. To the extent that our existing capital is insufficient to fund our future operating requirements and/or cover claim losses, we may need to raise additional funds through financings or limit our growth. Any equity or debt financing, if available at all, may be on terms that are unfavorable to us. In the case of equity financings, dilution to our shareholders could result, and, in any case, such securities may have rights, preferences and privileges that are senior to those of our outstanding securities. Disruptions, uncertainty or volatility in the capital and credit markets may also limit our access to capital required to operate our business. Such market conditions may limit our ability to access the capital necessary to develop our business and replace, in a timely manner, our letters of credit facilities upon maturity. As such, we may be forced to delay raising capital or bear an unattractive cost of capital which could decrease our profitability and significantly reduce our financial flexibility. If we are not able to obtain adequate capital, our business, results of operations and financial condition could be adversely affected. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations-Financial Condition,

Liquidity and Capital Resources- Liquidity and Capital Resources.”

The loss of our key employees or our inability to retain them could negatively impact our business.

Our success has been, and will continue to be, dependent on our ability to retain the services of our existing key executive officers and to attract and retain additional qualified personnel in the future. The pool of talent from which we actively recruit is limited. Although, to date, we have not experienced difficulties in attracting and retaining key personnel, the inability to attract and retain qualified personnel could have a material adverse effect on our financial condition and results of operations. In addition, our underwriting staff is critical to our success in the production of business. While we do not consider any of our key executive officers or underwriters to be irreplaceable, the loss of the services of our key executive officers or underwriters or the inability to hire and retain other highly qualified personnel in the future could delay or prevent us from fully implementing our business strategy which could affect our financial performance.

Certain employees of our Bermuda operations are required to obtain work permits before engaging in a gainful occupation in Bermuda. Required work permits may not be granted or may not remain in effect.

Under Bermuda law, only persons who are Bermudians, spouses of Bermudians, holders of a permanent resident's certificate, holders of a working resident's certificate or persons who are exempt pursuant to the Incentives for Job Makers Act 2011, as amended (“exempted persons”) may engage in gainful occupation in Bermuda without a work permit issued by the Bermuda Government. Our success may depend in part on the continued services of key employees in Bermuda. Save for the CEO and other ‘chief’ officer positions (where the advertising requirement is automatically waived) or where specifically waived, a work permit will only be granted or extended upon showing that, after proper public advertisement, no exempted person is available who meets the minimum requirements of the position. A work permit is issued with an expiry date of up to five years and no assurances can be given that any work permit will be issued or, if issued, extended upon the expiration of the relevant term. However, based on current policy, it is unlikely that initial or extension applications in respect of persons holding ‘chief’ officer positions will be denied. We have been designated by the Bermuda Government under the Incentives for Job Makers Act 2011, as amended (the “IJM Act”), as a company whose senior executives can be exempt from work permit control. This designation will remain in force provided we continue to meet the criteria for such designation under the IJM Act. All of our key officers in Bermuda are exempted persons. If our designation under the IJM Act is revoked, certain of our key officers will require work permits. We also have other key positions in Bermuda held by persons

who hold work permits subject to extension. If work permits are not obtained or extended for our key employees, we could lose their services, which could materially affect our business.

Our information technology systems may be unable to meet the demands of customers.

Our information technology systems service our insurance portfolios. Accordingly, we are highly dependent on the effective operation of these systems. While we believe that the systems are adequate to service our insurance portfolios, there can be no assurance that they will operate in all manners in which we intend or possess all of the functionality required by customers currently or in the future.

Our customers, especially our mortgage insurance customers, require that we conduct our business in a secure manner, electronically via the Internet or via electronic data transmission. We must continually invest significant resources in establishing and maintaining electronic connectivity with customers. In order to integrate electronically with new customers in the mortgage insurance industry, we require electronic connections between our systems and those of the industry's largest mortgage servicing systems and leading loan origination systems. Our mortgage group currently possesses connectivity with certain of these external systems, but there is no assurance that such connectivity is sufficient and we are undertaking new electronic integration efforts with third-party loan servicing and origination systems. Such efforts could significantly delay entry into certain markets or customers as the electronic integration process requires time and effort to complete. Our business, financial condition and operating results may be adversely affected if we do not possess or timely acquire the requisite set of electronic integrations necessary to keep pace with the technological demands of customers.

Technology breaches or failures, including, but not limited to, those resulting from a malicious cyber attack on us or our business partners and service providers, could disrupt or otherwise negatively impact our business and/or expose us to litigation.

We rely on information technology systems to process, transmit, store and protect the electronic information, financial data and proprietary models that are critical to our business. Furthermore, a significant portion of the communications between our employees and our business partners and service providers depends on information technology and electronic information exchange. Like all companies, our information technology systems are vulnerable to data breaches, interruptions or failures due to events that may be beyond our control, including, but not limited to, natural disasters, power outages, theft, terrorist attacks, computer viruses, hackers, errors in usage and general technology failures. Additionally, our employees and vendors may use portable computers or mobile devices which may contain duplicate or similar

information to that in our computer systems, and these devices can be stolen, lost or damaged. Security breaches could expose us to the loss or misuse of our information, litigation and potential liability. In addition, cyber incidents that impact the availability, reliability, speed, accuracy or other proper functioning of these systems could have a significant negative impact on our operations and possibly our results. An incident could also result in a violation of applicable privacy and other laws, damage our reputation, cause a loss of customers or give rise to monetary fines and other penalties, which could be significant.

We believe that we have established and implemented appropriate security measures, controls and procedures to safeguard our information technology systems and to prevent unauthorized access to such systems and any data processed and/or stored in such systems, and we periodically employ third parties to evaluate and test the adequacy of such systems, controls and procedures. In addition, we have established a comprehensive business continuity plan which is designed to ensure that we are able to maintain all aspects of our key business processes functioning in the midst of certain disruptive events, including any disruptions to or breaches of our information technology systems. Our business continuity plan is routinely tested and evaluated for adequacy. Despite these safeguards, disruptions to and breaches of our information technology systems are possible. Because we rely on our technology systems for many critical functions, including connecting with our customers, if such systems were to fail or become outmoded, we may experience a significant disruption in our operations and in the business we receive and process, which could adversely affect our results of operations and financial condition.

In addition, the regulatory environment surrounding information security and privacy is increasingly changing. We are subject to EU, U.S. federal, state and other foreign laws and regulations regarding the protection of personal data and information. These laws and regulations are complex and sometimes conflict. We could be subject to fines, penalties and/or regulatory enforcement actions in one or more jurisdictions if any person, including our employees, disregards, breaches, whether intentionally or negligently, our established controls to protect the confidential information of our employees or clients.

The costs savings we realize from our services agreement with PMI is declining and the provision of services to PMI could hinder our ability to execute our U.S. mortgage insurance business plan.

Pursuant to a multi-year services agreement with PMI (the "Services Agreement"), we perform or assist with many of PMI's run-off operations. We believe that this arrangement allows us to leverage our operations and reduce costs associated with our technology systems and other mortgage insurance

operations. Following the acquisition of UGC by ACGL, we commenced discussions with PMI on amending the calculation of the servicing fee in the Services Agreement. Any changes to the Services Agreement are subject to the approval of the Arizona state court overseeing the receivership of PMI. If we are unable to reach agreement with PMI on reasonable revisions to the calculation of the servicing fee, or such revisions are not approved by the receivership court, we may not achieve some or all of the cost savings anticipated. The level of services required by PMI is decreasing and will continue to decrease. If the level of services required by PMI is less than anticipated or PMI terminates the Services Agreement, we may charge PMI a lower than anticipated portion of our own fixed costs and we may not achieve the cost savings anticipated. In addition, our performance under the Services Agreement could distract us from the execution of our U.S. mortgage insurance business plan. If we fail to perform services or fail to meet specified performance standards, PMI may terminate the Services Agreement and could exercise other remedies, including, under certain circumstances, the release to PMI of source code relating to our technology systems. PMI's insureds, with whom we deal on PMI's behalf, could seek remedies against us. If any of these events were to occur, our financial condition and results of operations could be adversely affected.

If the volume of low down payment mortgage originations declines, the amount of mortgage insurance we write in the U.S. could decline, which would reduce our mortgage insurance revenues.

The size of the U.S. mortgage insurance market depends in large part upon the volume of low down payment home mortgage originations. Factors affecting the volume of low down payment mortgage originations include, among others: restrictions on mortgage credit due to stringent underwriting standards and liquidity issues affecting lenders; changes in mortgage interest rates and home prices, and other economic conditions in the U.S. and regional economies; population trends, including the rate of household formation; and U.S. government housing policy. A decline in the volume of low down payment home mortgage originations could decrease demand for mortgage insurance, decrease our U.S. new insurance written and reduce mortgage insurance revenues.

If the role of the GSEs in the U.S. housing market changes, or if the GSEs change other policies or practices, the amount of insurance that we write could decrease.

The GSEs are the beneficiaries of the significant majority of the insurance policies we issue as a result of their purchases, statutorily required or otherwise, of qualifying mortgage loans from lenders or investors. The charters of the GSEs require credit enhancement for low down payment mortgages in order for such loans to be eligible for purchase or guarantee by the GSEs. In 2008, the GSEs were placed under the conservatorship of the Federal Housing Finance Authority ("FHFA"), which has

regulatory and operational control over the GSEs and has directed, and is likely to continue to direct, changes to the business practices of the GSEs in ways that affect the mortgage insurance industry. Since the commencement of the GSEs' conservatorship, the U.S. mortgage market has been the target of numerous and differing proposals for reform. These range from elimination, privatization or replacement of the GSEs, to a more limited ongoing role of the GSEs that combines private capital with the backing of the U.S. government. None of these proposals have passed into law, and, given their variety and the continuing interest in housing and mortgage finance reform issues, and the changing priorities of the Federal Administration, we cannot predict how or when the conservatorship of the GSEs will be resolved or the role of the GSEs in the U.S. mortgage market may change, or in what ways such changes would impact our business, operations and financial condition. If the charters of the GSEs were amended to change or eliminate the acceptability of private mortgage insurance, our mortgage insurance business could decline significantly.

In addition to systemic reform, changes in the following or other GSE policies could significantly affect our U.S. mortgage insurance operations: the amount of loans purchased by the GSEs that require mortgage insurance; the level of private mortgage insurance coverage lenders select when private mortgage insurance is used as the required credit enhancement on low down payment mortgages; GSE pricing, including the amount of loan level price adjustments and guaranty fees that the GSEs assess on loans that require mortgage insurance, which could reduce the demand for our products; loan eligibility standards for loans purchased by the GSEs, which impact the conforming mortgage loan origination market, including loan quality and availability; terms on which mortgage insurance coverage can be canceled before reaching the cancellation thresholds required by law; the loss management programs established by the GSEs and the circumstances in which mortgage servicers must implement such programs; the extent to which the GSEs intervene in mortgage insurers' claims payment and rescission practices; purchases by the GSEs of credit enhancements other than mortgage insurance; whether the GSEs influence mortgage lenders' selection of mortgage insurers providing coverage; and the size of loans that are eligible for purchase or guaranty by the GSEs. If the GSEs change their policies or practices, the amount of insurance that we write could decrease.

The GSEs have various loan purchase programs that allow for different levels of mortgage insurance coverage. Under "charter coverage," certain lenders may choose a mortgage insurance coverage percentage that is less than the GSEs' "standard coverage" and only the minimum required by the GSEs' charters. The significant majority of Arch MI U.S.'s risk written in 2016 was on loans with GSE standard coverage. We charge higher premium rates for higher coverage percentages. To the

extent that lower coverage is selected on GSE loans we insure in the future, Arch MI U.S.'s revenue would be reduced.

In addition, in the last four years and for 2017, the FHFA has set goals for the GSEs to transfer significant portions of GSE mortgage credit risk to the private sector through their mortgage credit risk transfer (CRT) programs; such transactions generally have not included the purchase of private mortgage insurance from U.S. private mortgage insurers. Rather, these transactions led to increased opportunities for multiline property casualty reinsurers and capital markets participants.

As a result of the foregoing issues, it is uncertain what role the GSEs and the mortgage insurance industry will play in the housing finance system in the future or the impact of any such changes on Arch MI U.S. Changes in the roles of the GSEs or their practices could have a material adverse effect on our U.S. mortgage insurance business.

The premiums we charge for mortgage insurance on insured loans and the associated investment income may not be adequate to compensate for future losses from these loans.

We set premiums at the time a policy is issued based upon our expectations regarding likely performance over the life of insurance coverage. We generally cannot cancel mortgage insurance coverage or adjust renewal premiums during the life of a mortgage insurance policy. As a result, losses from higher than anticipated claims generally cannot be offset by premium increases on policies in force or mitigated by non-renewal or cancellation of insurance coverage. The premiums we charge on our insurance in force and the associated investment income may not be adequate to compensate us for the risks and costs associated with the insurance coverage provided to customers. An increase in the number or size of claims, compared to what we anticipate, could adversely affect Arch MI U.S.'s results of operations and financial condition.

New GSE eligibility requirements for mortgage insurers could require us to contribute additional capital to Arch MI U.S. in the future, and could negatively impact our results of operations and financial condition, or reduce our operating flexibility.

Pursuant to their charters, the GSEs purchase low down payment loans insured by MIs that they determine to be qualified. Substantially all of Arch MI U.S.'s insurance written has been for loans sold to the GSEs. Fannie Mae and Freddie Mac have each published comprehensive requirements to become and remain a qualified mortgage insurer. In April 2015, the GSEs published comprehensive, revised requirements, known as the Private Mortgage Insurer Eligibility Requirements or "PMIERS." The PMIERS became effective December 31, 2015 and were amended by GSE Guidance Letters in December 2016. The PMIERS apply to AMIC, United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company, which are GSE-approved

mortgage insurers ("eligible mortgage insurers"). The PMIERS impose limitations on the type of risk insured, the forms and insurance policies issued, standards for the geographic and customer diversification of risk, procedures for claims handling, acceptable underwriting practices, standards for certain reinsurance cessions and financial requirements, among other things. The financial requirements require a mortgage insurer's available assets, which generally include only the most liquid assets of an insurer, to meet or exceed "minimum required assets" as of each quarter end. Minimum required assets are calculated from PMIERS tables with several risk dimensions (including origination year, original loan-to-value and original credit score of performing loans, and the delinquency status of non-performing loans) and are subject to a minimum amount.

No later than April 15 of each year, mortgage insurers must certify to the GSEs that they meet all of the requirements of the PMIERS as of December 31 of the prior year or identify specific requirements not met. Our eligible mortgage insurers each satisfied the PMIERS' financial requirements as of December 31, 2016. However, the available assets required to satisfy the revised financial requirements of the PMIERS at any point in time will be affected by many factors, including: macro-economic conditions, including the future performance of the housing market, which could negatively affect the performance of our mortgage insurance portfolio (including its loss development); the size and composition of our mortgage insurance portfolio at the applicable time of measurement; and the manner in which the PMIERS are interpreted and applied by the GSEs, including their determinations of the amount of risk ceded to reinsurers that we may deduct in its calculation of minimum required assets.

As a result of these and other factors, the amount of capital required to satisfy the PMIERS may vary significantly over time. Primarily as a result of Arch MI U.S.'s projected insurance portfolio growth in 2017 and thereafter, we expect that we will need to contribute additional capital to one or more Arch MI U.S. companies to satisfy the PMIERS' financial requirements. In conjunction with the acquisition of UGC and the related approval of the change of control by the GSEs, the GSEs imposed additional requirements on our eligible mortgage insurers, including maintaining capital in excess of PMIERS requirements on a consolidated basis and requiring notifications relating to certain integration activities. We cannot be sure that the capital required will not be materially higher than we anticipate or that we will be able to meet the capital requirements on an acceptable timetable, if at all. Further, to the extent that the ability to transfer capital within affiliated Arch MI U.S. companies is restricted, we may need to contribute additional capital to Arch MI U.S. to fund expected insurance portfolio growth. Increases in the capital required to satisfy the PMIERS may decrease our return on capital.

There also can be no assurance that the GSEs will not make the PMIERS' financial requirements more onerous in the future.

The PMIERS provide that the tables of factors that determine minimum required assets may be updated to reflect changes in risk characteristics and macroeconomic conditions.

The PMIERS contain extensive requirements relating to the operation of our mortgage insurance business, including imposing additional operational requirements in areas such as claim processing, loss mitigation, underwriting, quality control, and reporting. The requirements in the PMIERS have caused us to make changes to our business practices and incur additional costs in order to achieve and maintain compliance with the PMIERS.

Under the PMIERS, AMIC was deemed to be a “newly-approved insurer.” As a result, until January 2017, AMIC was subject to additional PMIER requirements. Since January 2017, none of AMIC, United Guaranty Residential Insurance Company or United Guaranty Mortgage Indemnity Company is classified as a “newly-approved insurer” under PMIERS. See “Regulation—U.S. Insurance Regulation-GSE Qualified Mortgage Insurer Requirements.”

While we intend to comply with these requirements, there can be no assurance that the GSEs will continue to treat AMIC, United Guaranty Residential Insurance Company or United Guaranty Mortgage Indemnity Company as eligible mortgage insurers. The GSEs, as major purchasers of conventional mortgage loans in the United States, are the primary beneficiaries of Arch MI U.S.’s mortgage insurance coverage. If either or both of the GSEs were to cease to consider AMIC, United Guaranty Residential Insurance Company or United Guaranty Mortgage Indemnity Company as eligible mortgage insurers and, therefore, cease accepting our mortgage insurance products, our results of operations and financial condition would be adversely affected.

The mix of business we write affects Arch MI U.S.’s losses and will affect its future compliance with the final PMIERS financial requirements.

Our mortgage insurance portfolio includes loans with loan-to-value ratios exceeding 95%, loans with FICO scores below 620, adjustable rate mortgages, or ARMs, reduced documentation loans and less than A-quality loans. Even when housing values are stable or rising, we expect higher default and claim rates for high loan-to-value loans, loans with lower FICO scores, ARMs, reduced documentation loans, and less-than-A quality loans. Although we attempt to incorporate the higher default and claim rates associated with these loans into our underwriting and pricing models, there can be no assurance that the premiums earned and the associated investment income will adequately compensate us for future losses from these loans. From time to time, we change the types of loans that we insure and the requirements under which we insure them. In 2016, we modestly expanded our underwriting guidelines and we expect this trend to continue.

The geographic mix of Arch MI U.S.’s business could increase losses and harm our financial performance. We are affected by economic downturns and other events in specific regions of the United States where a large portion of our U.S. mortgage insurance business is concentrated. As of December 31, 2016, 4.0% of Arch MI U.S.’s primary risk-in-force was located in Florida, 8.3% was located in Texas and 5.4% was located in California. Historically, Arch MI U.S. has experienced higher levels of losses in Florida and California.

Arch MI U.S.’s minimum required assets under the PMIERS will be determined, in part, by the particular risk profiles of the loans it insures. If, absent other changes, Arch MI U.S.’s mix of business changes to include more loans with higher loan-to-value ratios or lower credit scores, it will have a higher minimum required asset amount under the PMIERS and, accordingly, be required to hold more capital in order to maintain GSE eligibility.

State regulation of mortgage insurers could in the future cause Arch MI U.S. to need additional capital to fund its operations or expand its business and, if we are unable or unwilling to provide it with such capital, it may be unable to operate or expand, which could adversely affect our financial condition or results of operations.

Arch MI U.S. may require additional capital to support its growth and comply with regulatory and GSE requirements. Arch MI U.S.’s principal regulators are the Wisconsin OCI (AMIC and Arch Mortgage Guaranty Company) and the NC DOI (United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company). Under Wisconsin and North Carolina law, as well as that of 14 other states, a mortgage insurer must maintain minimum statutory capital relative to its risk-in-force in order for the mortgage insurer to continue to write new business. While formulations of minimum capital vary by jurisdiction, the most common measure applied allows for a maximum permitted risk to capital ratio of 25 to 1. Wisconsin and North Carolina and certain other states, including California and Illinois, apply a substantially similar requirement referred to as minimum policyholders position.

Potential changes to state mortgage insurance regulations could reduce Arch MI U.S.’s profitability and its ability to compete with credit enhancement alternatives to mortgage insurance.

The NAIC, which reviews state insurance laws and regulations, has established a Mortgage Guaranty Insurance Working Group (“Working Group”) to make recommendations to the NAIC’s Financial Condition Committee regarding changes to the NAIC’s Mortgage Guaranty Insurance Model Act. The Working Group has released a draft Model Act which includes proposed changes to minimum statutory capital requirements.

If the NAIC revises the Model Act, some state legislatures are likely to enact and implement part or all of the revised provisions. While we cannot predict the effect that any NAIC recommendations or future legislation may have on Arch MI U.S., such changes could reduce Arch MI U.S.'s profitability and its ability to compete with credit enhancement alternatives to mortgage insurance, which could adversely affect our financial condition or results of operations.

If servicers fail to adhere to appropriate servicing standards or experience disruptions to their businesses, our mortgage insurance operations could be adversely affected.

We depend on reliable, consistent third-party servicing of the loans that we insure. Among other things, our mortgage insurance policies require our customers and their servicers to timely submit premium and reports and utilize commercially reasonable efforts to limit and mitigate loss when a loan is in default. Without reliable, consistent third-party servicing, our insurance subsidiaries may be unable to correctly record new loans as they are underwritten, receive and process payments on insured loans and/or properly recognize and establish reserves on loans when a default exists or occurs but is not reported to us. In addition, if these servicers fail to limit and mitigate losses when appropriate, our losses may unexpectedly increase. If one or more servicers failed to adhere to these requirements, our financial results could be adversely affected.

The implementation of the Basel III Capital Accord may adversely affect the use of mortgage insurance by certain banks.

In 1988, the Basel Committee on Banking Supervision developed the Basel Capital Accord, "Basel I," which set out international benchmarks for assessing banks' capital adequacy requirements. In 2005, the Basel Committee issued "Basel II" which, among other things, governs the capital treatment of mortgage insurance purchased and held on balance sheet by banks in respect of their origination and securitization activities. In July 2013, federal agencies approved publication of final regulatory capital rules, called the "Basel III Rules." With certain exceptions, the Basel III Rules became effective on January 1, 2014. If further implementation of the Basel III Rules increases the capital requirements of banking organizations with respect to the residential mortgages we insure or does not provide sufficiently favorable treatment for the use of mortgage insurance, it could adversely affect the demand for mortgage insurance. In December 2015, the Basel Committee proposed for comment a revised capital framework that would assign risk-weights for mortgage assets based on the loan-to-value ratio of the loan at origination, without consideration of mortgage insurance. If that proposal is finalized as proposed, U.S. federal regulators could take a similar approach for U.S. institutions, which could adversely affect the demand for mortgage insurance.

Some of the provisions of our bye-laws and our shareholders agreement may have the effect of hindering, delaying or preventing third party takeovers or changes in management initiated by shareholders. These provisions may also prevent our shareholders from receiving premium prices for their shares in an unsolicited takeover.

Some provisions of our bye-laws could have the effect of discouraging unsolicited takeover bids from third parties or changes in management initiated by shareholders. These provisions may encourage companies interested in acquiring us to negotiate in advance with our board of directors, since the board has the authority to overrule the operation of several of the limitations.

Among other things, our bye-laws provide: for a classified board of directors, in which the directors of the class elected at each annual general meeting holds office for a term of three years, with the term of each class expiring at successive annual general meetings of shareholders; that the number of directors is determined by the board from time to time by a vote of the majority of our board; that directors may only be removed for cause, and cause removal shall be deemed to exist only if the director whose removal is proposed has been convicted of a felony or been found by a court to be liable for gross negligence or misconduct in the performance of his or her duties; that our board has the right to fill vacancies, including vacancies created by an expansion of the board; and for limitations on a shareholder's right to raise proposals or nominate directors at general meetings. Our bye-laws provide that certain provisions which may have anti-takeover effects may be repealed or altered only with prior board approval and upon the affirmative vote of holders of shares representing at least 65% of the total voting power of our shares entitled generally to vote at an election of directors.

The bye-laws also contain a provision limiting the rights of any U.S. person (as defined in section 7701(a)(30) of the Internal Revenue Code of 1986, as amended (the "Code")) that owns shares of ACGL, directly, indirectly or constructively (within the meaning of section 958 of the Code), representing more than 9.9% of the voting power of all shares entitled to vote generally at an election of directors. The votes conferred by such shares of such U.S. person will be reduced by whatever amount is necessary so that after any such reduction the votes conferred by the shares of such person will constitute 9.9% of the total voting power of all shares entitled to vote generally at an election of directors. Notwithstanding this provision, the board may make such final adjustments to the aggregate number of votes conferred by the shares of any U.S. person that the board considers fair and reasonable in all circumstances to ensure that such votes represent 9.9% of the aggregate voting power of the votes conferred by all shares of ACGL entitled to vote generally at an election of directors. ACGL will assume that all shareholders (other than specified persons) are U.S.

persons unless we receive assurance satisfactory to us that they are not U.S. persons.

Moreover, most states, including states in which our subsidiaries are domiciled, have laws and regulations that require regulatory approval of a change in control of an insurer or an insurer's holding company. Where such laws apply to us and our subsidiaries, there can be no effective change in our control unless the person seeking to acquire control has filed a statement with the regulators and has obtained prior approval for the proposed change from such regulators. The usual measure for a presumptive change in control pursuant to these laws is the acquisition of 10% or more of the voting power of the insurance company or its parent, although this presumption is rebuttable. Consequently, a person may not acquire 10% or more of our common shares without the prior approval of insurance regulators in the state in which our subsidiaries are domiciled.

The bye-laws also provide that the affirmative vote of at least 66 2/3% of the outstanding voting power of our shares (excluding shares owned by any person (and such person's affiliates and associates) that is the owner of 15% or more (a "15% Holder") of our outstanding voting shares) shall be required for various corporate actions, including: merger or consolidation of the company into a 15% Holder; sale of any or all of our assets to a 15% Holder; the issuance of voting securities to a 15% Holder; or amendment of these provisions; *provided, however*, the supermajority vote will not apply to any transaction approved by the board.

The provisions described above may have the effect of making more difficult or discouraging unsolicited takeover bids from third parties. To the extent that these effects occur, shareholders could be deprived of opportunities to realize takeover premiums for their shares and the market price of their shares could be depressed. In addition, these provisions could also result in the entrenchment of incumbent management.

Our operating insurance and reinsurance subsidiaries are subject to regulation in various jurisdictions, and violations of existing regulations or material changes in the regulation of their operations could adversely affect us.

Our insurance and 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 insurance business, which may include trade and claim practices, accounting methods, premium rates, marketing practices, claims practices, advertising, policy forms, and capital adequacy. These agencies are concerned primarily with the protection of policyholders rather than shareholders. Governmental agencies may censure, impose fines, additional capital requirements or limitations on our operations, and/or impose criminal sanctions for violation of regulatory

requirements. Moreover, insurance laws and regulations, among other things: establish solvency requirements, including minimum reserves and capital and surplus requirements; limit the amount of dividends, tax distributions, intercompany loans and other payments our insurance subsidiaries can make without prior regulatory approval; impose restrictions on the amount and type of investments we may hold; require assessments through guaranty funds to pay claims of insolvent insurance companies; and require participation in state-assigned risk plans which may take the form of reinsuring a portion of a pool of policies or the direct issuance of policies to insureds.

Our U.S. insurance and reinsurance subsidiaries write insurance and reinsurance in the U.S. These subsidiaries are subject to extensive regulation under state statutes which delegate regulatory, supervisory and administrative powers to state insurance commissioners. Such regulation generally is designed to protect policyholders rather than investors. Arch Insurance Canada writes insurance in Canada and Arch Re U.S., through a branch, writes reinsurance in Canada and each is subject to federal, as well as provincial and territorial, regulation in Canada.

In addition, virtually all U.S. states require insurers licensed to do business therein to bear a portion of contingent and incurred claim handling expenses and the unfunded amount of "covered" claim and unearned premium obligations of impaired or insolvent insurance companies, either up to the policy's limit, the applicable guaranty fund covered claim obligation cap, or 100% of statutorily defined workers' compensation benefits, subject to applicable deductibles. These obligations are funded by assessments, made on a retrospective, prospective or prefunded basis, which are levied by guaranty associations within the state, up to prescribed limits (typically 2% of "net direct written premium"), on all member insurers in the state on the basis of the proportionate share of the premiums written by member insurers in certain covered lines of business in which the impaired, insolvent or failed insurer was engaged. Accordingly, the total amount of assessments levied on us by the states in which we are licensed to write insurance may increase as we increase our premiums written. In addition, as a condition to the ability to conduct business in certain states (and within the jurisdiction of some local governments), insurance companies are subject to or required to participate in various premium or loss based insurance-related assessments, including mandatory (a/k/a "involuntary") insurance pools, underwriting associations, workers' compensation second-injury funds, reinsurance funds and other state insurance facilities. Although we may be entitled to take premium tax credit (or offsets), recover policy surcharges or include assessments in future premium rate structures for payments we make under these facilities, the effect of these assessments and insurance-related arrangements, or changes in them, could reduce our profitability in any given period or limit our ability to grow our business.

We are also subject to substantial regulation in other jurisdictions in which our subsidiaries and their branch offices conduct business, including the U.K., other the EU Member States, Canada and Switzerland, and a number of our subsidiaries are subject to the financial and operational supervision of the regulators in those jurisdictions.

We periodically review our corporate structure so that we can optimally deploy our capital. Changes in that structure require regulatory approval. Delays or failure in obtaining any of these approvals could limit the amount of insurance that we can write in the U.S.

If ACGL or any of our subsidiaries were to become subject to the laws of a new jurisdiction in which such entity is not presently admitted, ACGL or such subsidiary may not be in compliance with the laws of the new jurisdiction. In addition, we could, at any time and in any jurisdiction, face individual, group and class action lawsuits by our policyholders and others for alleged violations of applicable laws and regulations. Any such litigation or failure to comply with applicable laws could result in the imposition of significant restrictions on our ability to do business, and could also result in suspensions, injunctions, monetary damages, fines or other sanctions, any or all of which could adversely affect our financial condition and results of operations.

Our business is subject to risks related to litigation.

We may from time to time be subject to a variety of legal actions relating to our current and past business operations, including, but not limited to, disputes over coverage or claims adjudication, including claims alleging that we have acted in bad faith in the administration of claims by our policyholders, disputes with our agents, producers or network providers over compensation and termination of contracts and related claims and disputes relating to certain businesses acquired or disposed of by us.

Multi-party or class action claims may present additional exposure to substantial economic, non-economic or punitive damage awards. The loss of even one of these claims, if it resulted in a significant damage award or a judicial ruling that was otherwise detrimental, could create a precedent in the industry that could have a material adverse effect on our results of operations and financial condition. This risk of potential liability may make reasonable settlements of claims more difficult to obtain. We cannot determine with any certainty what new theories of recovery may evolve or what their impact may be on our business.

Mortgage insurers have been involved in litigation alleging violations of the Real Estate Settlement Procedures Act of 1974 (“RESPA”) and the Fair Credit Reporting Act of 1970. RESPA generally precludes Arch MI U.S. from providing services or products to mortgage lenders free of charge, charging fees for

services that are lower than their reasonable or fair market value, and paying fees for services that others provide that are higher than their reasonable or fair market value, in exchange for the referral of settlement services. Violations of the referral fee limitations of RESPA may be enforced by the federal agencies, state attorneys general and state insurance commissioners, as well as by private litigants in class actions. In the past, a number of lawsuits and regulatory orders issued by the Consumer Finance Protection Bureau have challenged the actions of mortgage insurers, alleging that the insurers violated RESPA by entering into captive reinsurance arrangements or providing products or services, including contract underwriting, to mortgage lenders at improperly reduced prices in return for the referral of mortgage insurance. See “Regulation-U.S. Insurance Regulation-Real Estate Settlement Procedures Act of 1974.”

If our Bermuda principal operating subsidiary becomes subject to insurance statutes and regulations in jurisdictions other than Bermuda or if there is a change in Bermuda law or regulations or the application of Bermuda law or regulations, there could be a significant and negative impact on our business.

Arch Re Bermuda, our Bermuda insurance and reinsurance subsidiary, is a registered Bermuda Class 4 general business insurer and as a Class C long-term business insurer and has been designated as the Designated Insurer for group supervision purposes. As such, it is subject to regulation and supervision in Bermuda. See “Regulation-Bermuda Insurance Regulation.”

Bermuda’s statutes and regulations may restrict our ability to write insurance and reinsurance policies, distribute funds and pursue our investment strategy. We do not presently intend for Arch Re Bermuda to be admitted to do business in the U.S., U.K. or any jurisdiction other than Bermuda, although Arch Re Bermuda has been approved as a “certified reinsurer” in certain U.S. states that allow reduced collateral for reinsurance ceded to such reinsurers. We cannot assure you that insurance regulators in the U.S., U.K. or elsewhere will not review the activities of Arch Re Bermuda or its subsidiaries or agents and assert that Arch Re Bermuda is subject to such jurisdiction’s licensing requirements, or impose restrictions on Arch Re Bermuda as a condition for its being approved as a “certified reinsurer.”

Generally, Bermuda insurance statutes and regulations applicable to Arch Re Bermuda are less restrictive than those that would be applicable if they were governed by the laws of any states in the U.S. If in the future we become subject to any insurance laws of the U.S. or any state thereof or of any other jurisdiction, we cannot assure you that we would be in compliance with such laws or that complying with such laws would not have a significant and negative effect on our business.

The process of obtaining licenses is very time consuming and costly, and Arch Re Bermuda may not be able to become licensed in jurisdictions other than Bermuda should we choose

to do so. The modification of the conduct of our business that would result if we were required or chose to become licensed in certain jurisdictions could significantly and negatively affect our financial condition and results of operations. In addition, our inability to comply with insurance statutes and regulations could significantly and adversely affect our financial condition and results of operations by limiting our ability to conduct business as well as subject us to penalties and fines.

Because Arch Re Bermuda is a Bermuda company, it is subject to changes in Bermuda law and regulation that may have an adverse impact on our operations, including through the imposition of tax liability or increased regulatory supervision. In addition, Arch Re Bermuda will be exposed to any changes in the political environment in Bermuda. The Bermuda insurance and reinsurance regulatory framework recently has become subject to increased scrutiny in many jurisdictions, including the U.K. While we cannot predict the future impact on our operations of changes in the laws and regulation to which we are or may become subject, any such changes could have a material adverse effect on our business, financial condition and results of operations.

If our Bermuda reinsurance subsidiary is unable to provide collateral to ceding companies, its ability to conduct business could be significantly and negatively affected.

Arch Re Bermuda is a registered Bermuda insurance company and is not licensed or admitted as an insurer in any jurisdiction in the U.S., although Arch Re Bermuda has been approved as a “certified reinsurer” in certain U.S. states that allow reduced collateral for reinsurance ceded to such reinsurers. Insurance regulations in the U.S. do not uniformly permit insurance companies to take credit for reinsurance obtained from unlicensed or non-admitted insurers on their statutory financial statements unless security is posted, and Arch Re Bermuda's contracts generally require it to post a letter of credit or provide other security, even in U.S. states where it has been approved for reduced collateral. Although, to date, Arch Re Bermuda has not experienced any difficulties in providing collateral when required, if we are unable to post security in the form of letters of credit or trust funds when required, the operations of Arch Re Bermuda could be significantly and negatively affected.

ACGL is a holding company and is dependent on dividends and other payments from its operating subsidiaries, which are subject to dividend restrictions, to make payments, including the payment of debt service obligations and operating expenses we may incur and any payments of dividends, redemption amounts or liquidation amounts with respect to our preferred shares and common shares.

ACGL is a holding company whose assets primarily consist of the shares in our subsidiaries. Generally, ACGL depends on its available cash resources, liquid investments and dividends or other distributions from subsidiaries to make payments,

including the payment of debt service obligations and operating expenses it may incur and any payments of dividends, redemption amounts or liquidation amounts with respect to our preferred shares and common shares, and to fund the share repurchase program. The ability of our regulated insurance and reinsurance subsidiaries to pay dividends or make distributions is dependent on their ability to meet applicable regulatory standards. In addition, the ability of our insurance and reinsurance subsidiaries to pay dividends to ACGL and to intermediate parent companies owned by ACGL could be constrained by our dependence on financial strength ratings from independent rating agencies. Our ratings from these agencies depend to a large extent on the capitalization levels of our insurance and reinsurance subsidiaries. We believe that ACGL has sufficient cash resources and available dividend capacity to service its indebtedness and other current outstanding obligations. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Financial Condition, Liquidity and Capital Resources—Liquidity and Capital Resources.”

The enforcement of civil liabilities against us may be difficult.

We are a Bermuda company and some of our officers and directors are residents of various jurisdictions outside the U.S. All or a substantial portion of our assets and the assets of those persons may be located outside the U.S. As a result, it may be difficult for you to effect service of process within the U.S. upon those persons or to enforce in U.S. courts judgments obtained against those persons.

We have appointed National Registered Agents, Inc., New York, New York, as our agent for service of process with respect to actions based on offers and sales of securities made in the U.S. We have been advised by our special Bermuda legal counsel, Conyers Dill & Pearman Limited, that the U.S. and Bermuda do not currently have a treaty providing for reciprocal recognition and enforcement of judgments of U.S. courts in civil and commercial matters and that a final judgment for the payment of money rendered by a court in the U.S. based on civil liability, whether or not predicated solely upon the U.S. federal securities laws, would, therefore, not be automatically enforceable in Bermuda. We also have been advised by Conyers Dill & Pearman Limited that a final and conclusive judgment obtained in a court in the U.S. under which a sum of money is payable as compensatory damages (*i.e.*, not being a sum claimed by a revenue authority for taxes or other charges of a similar nature by a governmental authority, or in respect of a fine or penalty or multiple or punitive damages) may be the subject of an action on a debt in the Supreme Court of Bermuda under the common law doctrine of obligation.

Such an action should be successful upon proof that the sum of money is due and payable, and without having to prove the facts supporting the underlying judgment, as long as: the court which gave the judgment had proper jurisdiction over the parties to

such judgment; such court did not contravene the rules of natural justice of Bermuda; such judgment was not obtained by fraud; the enforcement of the judgment would not be contrary to the public policy of Bermuda; no new admissible evidence relevant to the action is submitted prior to the rendering of the judgment by the courts of Bermuda; and there is due compliance with the correct procedures under Bermuda law.

A Bermuda court may impose civil liability on us or our directors or officers in a suit brought in the Supreme Court of Bermuda against us or such persons with respect to a violation of U.S. federal securities laws, provided that the facts surrounding such violation would constitute or give rise to a cause of action under Bermuda law.

Our international business is subject to applicable laws and regulations relating to sanctions and foreign corrupt practices, the violation of which could adversely affect our operations.

We must comply with all applicable economic sanctions and anti-bribery laws and regulations of the U.S. and other foreign jurisdictions where we operate, including the U.K. and the European Community. U.S. laws and regulations applicable to us include the economic trade sanctions laws and regulations administered by the Treasury's Office of Foreign Assets Control as well as certain laws administered by the U.S. Department of State. In addition, we are subject to the Foreign Corrupt Practices Act and other anti-bribery laws such as the U.K. Bribery Act that generally bar corrupt payments or unreasonable gifts to foreign governments or officials. Although we have policies and controls in place that are designed to ensure compliance with these laws and regulations, it is possible that an employee or intermediary could fail to comply with applicable laws and regulations. In such event, we could be exposed to civil penalties, criminal penalties and other sanctions, including fines or other punitive actions. In addition, such violations could damage our business and/or our reputation. Such criminal or civil sanctions, penalties, other sanctions, and damage to our business and/or reputation could have a material adverse effect on our financial condition and results of operations.

Risk Relating to Our Preferred Shares

General market conditions and unpredictable factors could adversely affect market prices for our outstanding preferred shares.

There can be no assurance about the market prices for our series of preferred shares that are traded publicly, the series C and series E preferred shares. Our series D preferred shares were issued in connection with the UGC acquisition and are not publicly traded (as described under "Risks Relating to Our Company—The price of our common shares may be volatile").

Several factors, many of which are beyond our control, will influence the fair value of our preferred shares, including, but not limited to:

- whether dividends have been declared and are likely to be declared on any series of our preferred shares from time to time;
- our creditworthiness, financial condition, performance and prospects;
- whether the ratings on any series of our preferred shares provided by any ratings agency have changed;
- the market for similar securities; and
- economic, financial, geopolitical, regulatory or judicial events that affect us and/or the insurance or financial markets generally.

Dividends on our preferred shares are non-cumulative.

Dividends on our preferred shares are non-cumulative and payable only out of lawfully available funds of ACGL under Bermuda law. Consequently, if ACGL's board of directors (or a duly authorized committee of the board) does not authorize and declare a dividend for any dividend period with respect to any series of our preferred shares, holders of such preferred shares would not be entitled to receive any such dividend, and such unpaid dividend will not accrue and will never be payable. ACGL will have no obligation to pay dividends for a dividend period on or after the dividend payment date for such period if its board of directors (or a duly authorized committee of the board) has not declared such dividend before the related dividend payment date; if dividends on our series C or series E preferred shares are authorized and declared with respect to any subsequent dividend period, ACGL will be free to pay dividends on any other series of preferred shares, including our series D preferred shares, and/or our common shares. In the past, we have not paid dividends on our common shares.

Our preferred shares are equity and are subordinate to our existing and future indebtedness.

Our preferred shares are equity interests and do not constitute indebtedness. As such, these preferred shares will rank junior to all of our indebtedness and other non-equity claims with respect to assets available to satisfy our claims, including in our liquidation. As of December 31, 2016, our total consolidated long-term debt was \$2.25 billion. We may incur additional debt in the future. Our existing and future indebtedness may restrict payments of dividends on our preferred shares. Additionally, unlike indebtedness, where principal and interest would customarily be payable on specified due dates, in the case of preferred shares, (1) dividends are payable only if declared by the board of directors of ACGL (or a duly authorized committee of the board) and (2) as described under "Risks Relating to Our Company—ACGL is a holding company and is dependent on

dividends and other payments from its operating subsidiaries, which are subject to dividend restrictions, to make payments, including the payment of debt service obligations and operating expenses we may incur and any payments of dividends, redemption amounts or liquidation amounts with respect to our preferred shares and common shares,” we are subject to certain regulatory and other constraints affecting our ability to pay dividends and make other payments.

The voting rights of holders of our preferred shares are limited.

Holders of our preferred shares have no voting rights with respect to matters that generally require the approval of voting shareholders. The limited voting rights of holders of our preferred shares include the right to vote as a class on certain fundamental matters that affect the preference or special rights of our preferred shares as set forth in the certificate of designations relating to each series of preferred shares. In addition, if dividends on our series C or series E preferred shares have not been declared or paid for the equivalent of six dividend payments, whether or not for consecutive dividend periods, holders of the outstanding series C or series E preferred shares will be entitled to vote for the election of two additional directors to our board of directors subject to the terms and to the limited extent as set forth in the certificate of designations relating to such series of preferred shares.

There is no limitation on our issuance of securities that rank equally with or senior to our preferred shares.

Our series C and series E preferred shares rank senior to our series D preferred shares, and we may issue additional securities that rank equally with or senior to our preferred shares without limitation. The issuance of securities ranking equally with or senior to our preferred shares may reduce the amount available for dividends and the amount recoverable by holders of such series in the event of a liquidation, dissolution or winding-up of ACGL.

Risks Relating to Taxation

We and our non-U.S. subsidiaries may become subject to U.S. federal income taxation and/or the U.S. federal income tax liabilities of our U.S. subsidiaries may increase.

ACGL and its non-U.S. subsidiaries intend to operate their business in a manner that will not cause them to be treated as engaged in a trade or business in the U.S. and, thus, will not be required to pay U.S. federal income taxes (other than U.S. excise taxes on insurance and reinsurance premium and withholding taxes on certain U.S. source investment income) on their income. However, because there is uncertainty as to the activities which constitute being engaged in a trade or business in the U.S., there can be no assurances that the IRS will not contend successfully that ACGL or its non-U.S. subsidiaries are engaged in a trade or business in the U.S. If ACGL or any of

its non-U.S. subsidiaries were subject to U.S. income tax, our shareholders' equity and earnings could be adversely affected.

Congress has been considering legislation intended to eliminate certain perceived tax advantages of Bermuda and other non-U.S. insurance companies and U.S. insurance companies having Bermuda and other non-U.S. affiliates, including perceived tax benefits resulting principally from reinsurance between or among U.S. insurance companies and their Bermuda affiliates. Some U.S. insurance companies have also been lobbying Congress recently to pass such legislation. In this regard, the American Jobs Creation Act of 2004 (the “Jobs Act”) permits the IRS to re-allocate, re-characterize or adjust items of income, deduction or certain other items related to a reinsurance agreement between related parties to reflect the proper source, character and amount for each item (in contrast to prior law, which only covered source and character). The Jobs Act also eliminated the tax benefits available to a U.S. company that, after March 4, 2003, changed its legal domicile to a non-U.S. jurisdiction, a transaction commonly known as an inversion. We changed our legal domicile from the U.S. to Bermuda, but were not affected by the anti-inversion rule because our change in domicile occurred in November 2000. The American Infrastructure Investment and Improvement Act of 2008 as passed by the Senate Finance Committee would have made the Jobs Act anti-inversion rule applicable retroactively to inversions that occurred after March 20, 2002. Although this modification would not affect ACGL, no assurance can be given that if reintroduced in the current Congress the final bill will not make the Jobs Act anti-inversion rule applicable retroactively to inversions that occurred on an earlier date, in which case ACGL could be adversely affected. A legislative proposal reintroduced in 2015 would treat certain foreign corporations as U.S. corporations if such corporation is primarily managed and controlled within the U.S. While we believe ACGL is not primarily managed and controlled within the U.S., there is no assurance that the proposal would not apply to ACGL. Another legislative proposal would treat a foreign corporation as a U.S. corporation if it is determined that the foreign corporation was formed or organized principally for the purpose of avoiding being treated as a U.S. corporation. It is uncertain whether this proposal would apply to ACGL, but it would adversely affect us if enacted and found to apply. Another legislative proposal has been introduced that would treat certain “tax haven CFCs” as U.S. corporations for federal income tax purposes. The term “tax haven CFC” would include a Bermuda corporation that is a controlled foreign corporation, but would exclude corporations that engage in the active conduct of a trade or business in Bermuda. It is not clear how this bill would apply to ACGL, which conducts its insurance and reinsurance businesses through its subsidiaries. Further, it is not clear whether this bill was intended to apply to a publicly traded company such as ACGL. There is no assurance that this legislative proposal, if enacted, would not apply to ACGL or any of its non-U.S. subsidiaries. In addition, Congress has

conducted hearings relating to the tax treatment of reinsurance between affiliates and is reported to be considering legislation that would adversely affect reinsurance between U.S. and non-U.S. affiliates. One such proposal would increase the excise tax rate on reinsurance premiums paid to affiliated non-U.S. reinsurers. A legislative proposal in the House of Representatives as well as a prior Senate Finance Committee staff discussion draft and other prior proposals would limit deductions for premiums ceded to affiliated non-U.S. reinsurers above certain levels. The Administration's Fiscal Year 2017 Revenue Proposals contain a similar but more restrictive provision that would deny deductions for all premiums ceded to affiliated non-U.S. reinsurers, offset by an exclusion for any ceding commissions received or reinsurance recovered from such affiliates. Two legislative proposals (*i.e.*, H.R. 3157 and S. 1963) introduced during the 112th Congress and two legislative proposals (*i.e.*, H.R. 6270 and S. 3424) introduced during the 114th Congress appeared to include a provision that is similar to the one contained in the Administration's Fiscal Year 2017 Revenue Proposals. No similar proposal has been introduced in the current 115th Congress. In July 2015, the Senate Finance Committee's International Tax Reform Working Group released a final report providing a loose framework for U.S. tax reform. While the final report discussed issues regarding foreign affiliate reinsurance, it did not recommend any specific proposal in this respect. Enactment of any such legislation or proposal described above as well as other changes in U.S. tax laws, regulations and interpretations thereof to address these issues could adversely affect us.

In November 2013, the Senate Committee on Finance published two alternative Chairman's Staff Discussion Drafts on reforming international business taxation. The drafts contain legislative proposals that, if enacted, could adversely affect us. The drafts include a provision to limit deductions for premium ceded to affiliated non-U.S. reinsurers, which is similar to the provision in the Administration's Fiscal Year 2017 Revenue Proposals as described above. The drafts would repeal the portfolio interest exemption on U.S. corporate debt, which could significantly increase tax liabilities on our investment portfolio or cause us to increase investment in non-U.S. corporate debt. In February 2014, the House Ways and Means Committee Chairman Dave Camp published a tax reform proposal titled "Tax Reform Act of 2014," which was subsequently introduced to the Congress in December 2014 (the "Camp bill"). The Camp bill contains several provisions that, if enacted, could adversely affect us. One provision is similar to the reinsurance premium disallowance provision contained in the Administration's Fiscal Year 2017 Revenue Proposals as described above. Other provisions in the Camp bill would modify certain tax rules applicable to U.S. and non-U.S. insurance companies, which could adversely affect our U.S. federal income tax liabilities. The Camp bill has not been reintroduced in the 114th Congress or the current 115th Congress. In February 2016, the United States Treasury

released a revised 2016 U.S. Model Income Tax Convention which contained several substantive changes to the 2006 U.S. Model Income Tax Convention. These changes outline the United States Treasury's positions on related issues in the future treaty negotiations. While the changes would have no legal effect unless they are incorporated in the relevant income tax treaties through negotiation with other contracting states, there is no assurance that the adoption of any of the changes would not adversely affect income tax liabilities of us or any of our subsidiaries.

In June 2016, the House Committee on Ways and Means issued a tax reform blueprint titled "Better Way for Tax Reform" as a conceptual framework for future reform of the United States tax laws. The blueprint proposes a so-called "border adjustment" system under which companies generally would be exempt from taxation on exports of goods and services and would be denied a tax deduction for any imports of goods or services. No detailed legislative proposal has been introduced in current Congress to implement the tax reform blueprint and it is unclear how an insurance company will be taxed under a "border adjustment" system. It is possible that any deduction for the reinsurance premiums paid by a U.S. insurance company to a non-U.S. insurance company would be disallowed and/or that an import tax on reinsurance premiums may be imposed. Any such disallowance of deductions for reinsurance premiums and/or import tax on reinsurance premiums (or other changes arising under the tax reform blueprint), if adopted, could adversely affect us and our subsidiaries.

Our non-U.K. companies may be subject to U.K. tax that may have a material adverse effect on our results of operations.

We intend to operate in such a manner so that none of our companies, other than our U.K. subsidiaries and branch operations (the "U.K. Group"), should be resident in the U.K. for tax purposes or carry on a trade, whether or not through a permanent establishment, in the U.K. Accordingly, we do not expect that of our other subsidiaries, other than the U.K. Group, should be subject to U.K. tax. Case law has held that whether or not a trade is being carried on in the U.K. is a matter of fact and emphasis is placed on where the operations take place from which the profits in substance arise. HM Revenue and Customs might contend successfully that one or more of our subsidiaries, in addition to the U.K. Group, is carrying on a trade in the U.K. For U.K. tax purposes, a non-U.K. tax resident company will be subject to U.K. corporation tax only if it carries on a trade through a permanent establishment in the U.K. However, that subsidiary may still be subject to U.K. income tax if it carries on a trade in the U.K., without a permanent establishment, unless it is entitled to the protection afforded by a double tax treaty between the U.K. and the jurisdiction in which that company is resident. If any of our subsidiaries is treated as resident, or carrying on a trade, in the U.K., whether or not through a permanent establishment, and, therefore, subject to

U.K. tax, our results of operations could be materially adversely affected.

We may become subject to taxes in Bermuda after March 31, 2035, which may have a material adverse effect on our results of operations.

Under current Bermuda law, we are not subject to tax on income, profits, withholding, capital gains or capital transfers. Furthermore, we have obtained from the Minister of Finance of Bermuda under the Exempted Undertakings Tax Protection Act, 1966, an assurance that, in the event that Bermuda enacts legislation imposing tax computed on profits, income, any capital asset, gain or appreciation, or any tax in the nature of estate duty or inheritance tax, then the imposition of the tax will not be applicable to us or our operations until March 31, 2035. We could be subject to taxes in Bermuda after that date. This assurance does not, however, prevent the imposition of taxes on any person ordinarily resident in Bermuda or any company in respect of its ownership of real property or leasehold interests in Bermuda.

The impact of Bermuda's letter of commitment to the OECD to eliminate harmful tax practices is uncertain and could adversely affect our tax status in Bermuda.

The Organization for Economic Cooperation and Development (“OECD”) has published reports and launched a global initiative among member and non-member countries on measures to limit harmful tax competition. These measures are largely directed at counteracting the effects of tax havens and preferential tax regimes in countries around the world. Bermuda was not listed in the most recent report as an uncooperative tax haven jurisdiction because it had previously committed to eliminate harmful tax practices, to embrace international tax standards for transparency, to exchange information and to eliminate an environment that attracts business with no substantial domestic activity. We are not able predict what changes will arise from the commitment or whether such changes will subject us to additional taxes.

We may become subject to increased taxation in Bermuda and other countries as a result of the OECD's plan on “Base erosion and profit shifting.”

The OECD, with the support of the G20, initiated the “base erosion and profit shifting” (“BEPS”) project in 2013 in response to concerns that international tax standards have not kept pace with changes in global business practices and that changes are needed to international tax laws to address situations where multinationals may pay little or no tax in certain jurisdictions by shifting profits away from jurisdictions where the activities creating those profits may take place. In October 2015, the OECD issued “final reports” in connection with the BEPS project. The final reports have been approved for adoption by the G20 finance ministers in November 2015.

The final reports provide the basis for international standards for corporate taxation that are designed to prevent, among other things, the artificial shifting of income to tax havens and low-tax jurisdictions, the erosion of the tax base through interest deductions on intercompany debt and the artificial avoidance of permanent establishments (*i.e.*, tax nexus with a jurisdiction). The measures also contemplate the development of a multilateral instrument to incorporate and facilitate changes to tax treaties.

Legislation to adopt these standards has been enacted or is currently under consideration in a number of jurisdictions to implement these standards, including country by country reporting. As a result, our income may be taxed in jurisdictions where it is not currently taxed and at higher rates of tax than currently taxed, which may substantially increase our effective tax rate. Also, the adoption of these standards may increase the complexity and costs associated with tax compliance and adversely affect our financial position and results of operation.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We lease office space in Bermuda where our principal offices are located. Our reinsurance group leases space for offices in the U.S., Bermuda, Europe, Canada and Dubai. Our insurance group leases space for offices in the U.S., Canada, Bermuda, Europe, South Africa and Australia. Our mortgage group leases

space for offices in the U.S. and Australia. We believe that the above described office space is adequate for our needs. However, as we continue to develop our business, we may open additional office locations in 2017.

ITEM 3. LEGAL PROCEEDINGS

We, in common with the insurance industry in general, are subject to litigation and arbitration in the normal course of our business. As of December 31, 2016, we were not a party to any

litigation or arbitration which is expected by management to have a material adverse effect on our results of operations and financial condition and liquidity.

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

MARKET INFORMATION

Our common shares are traded on the NASDAQ Stock Market under the symbol "ACGL." The following table sets forth the high and low sales prices for our common shares for the two most recent fiscal years by quarter:

	2016		2015	
	High	Low	High	Low
1st Quarter	\$71.67	\$59.83	\$63.01	\$57.67
2nd Quarter	\$73.12	\$67.50	\$68.01	\$59.78
3rd Quarter	\$85.16	\$68.85	\$74.98	\$64.28
4th Quarter	\$88.41	\$76.47	\$78.81	\$67.98

On February 24, 2017, the high and low sales prices and the closing price for our common shares as reported on the NASDAQ Stock Market were \$94.72, \$92.71 and \$94.54, respectively.

HOLDERS

As of February 24, 2017, and based on information provided to us by our transfer agent and proxy solicitor, there were 996 holders of record of our common shares and approximately 29,800 beneficial holders of our common shares.

ISSUER PURCHASES OF EQUITY SECURITIES

The following table summarizes our purchases of common shares for the 2016 fourth quarter:

Issuer Purchases of Common Shares				
Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plan or Programs (2)
10/1/2016-10/31/2016	8,263	\$ 77.59	—	\$ 446,501
11/1/2016-11/30/2016	5,364	\$ 79.33	—	\$ 446,501
12/1/2016-12/31/2016	19,131	\$ 85.93	—	\$ 446,501
Total	32,758	\$ 82.74	—	\$ 446,501

- (1) Includes repurchases by ACGL of shares, from time to time, from employees in order to facilitate the payment of withholding taxes on restricted shares granted and the exercise of stock appreciation rights. We purchased these shares at their fair market value, as determined by reference to the closing price of our common shares on the day the restricted shares vested or the stock appreciation rights were exercised.
- (2) Remaining amount available at December 31, 2016 under ACGL's share repurchase authorization, under which repurchases may be effected from time to time in open market or privately negotiated transactions through December 31, 2019.

The following table summarizes our purchases of series C non-cumulative preferred shares for the 2016 fourth quarter:

Issuer Purchases of Preferred Shares				
Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plan or Programs
12/1/2016-12/31/2016	97,807	\$ 25.48	—	—
Total	97,807	\$ 25.48	—	—

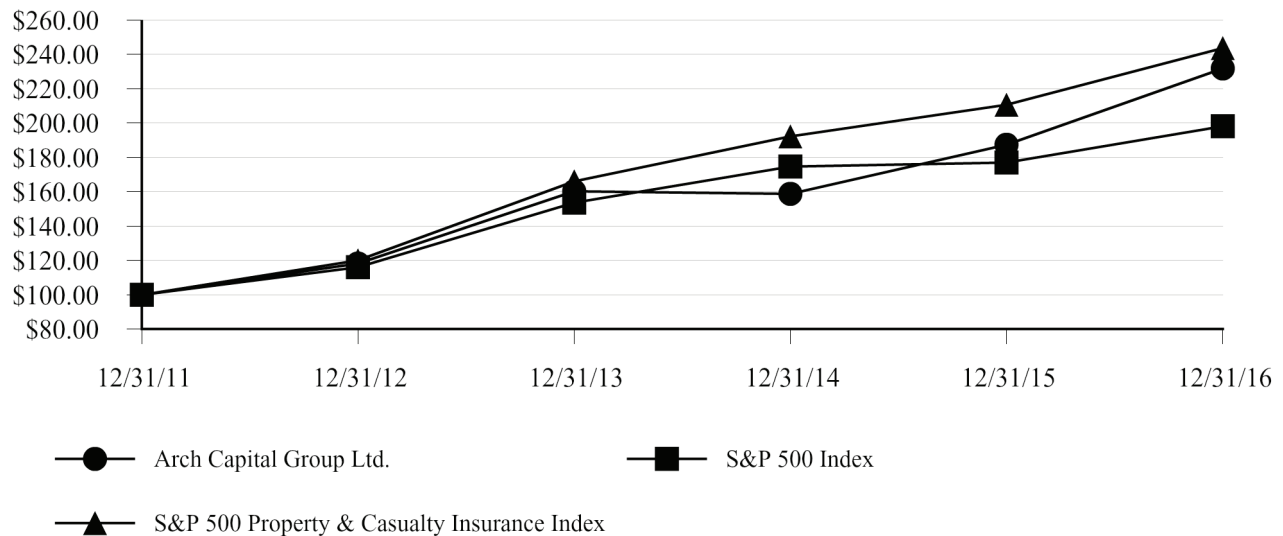
DIVIDENDS

Any determination to pay dividends on ACGL's preferred shares or common shares will be at the discretion of ACGL's board of directors (or a duly authorized committee of the board of directors) and will be dependent upon its results of operations, financial condition and other factors deemed relevant by ACGL's board of directors. As a holding company, ACGL will depend on future dividends and other permitted payments from its subsidiaries to pay dividends to its shareholders. ACGL's subsidiaries' ability to pay dividends, as well as its ability to pay dividends, is subject to regulatory, contractual, rating agency and other constraints. So long as any non-cumulative preferred shares remain outstanding for any dividend period, unless the full dividends for the latest completed dividend period on all outstanding non-cumulative preferred shares and parity shares have been declared and paid (or declared and a sum sufficient for the payment thereof has been set aside), (a) no dividend may be paid or declared on ACGL's common shares or any of its other securities ranking junior to the non-cumulative preferred shares (other than a dividend payable solely in common shares or in such other junior securities) and (b) no common shares or other junior shares may be purchased, redeemed or otherwise acquired for consideration by ACGL, directly or indirectly (other than (i) as a result of a reclassification of junior shares for or into other junior shares, or the exchange or conversion of one junior share for or into another junior share, (ii) through the use of the proceeds of a substantially contemporaneous sale of junior shares and (iii) as permitted by the bye-laws of ACGL in effect on the date of issuance of the non-cumulative preferred shares).

PERFORMANCE GRAPH

The following graph compares the cumulative total shareholder return on our common shares for each of the last five years through December 31, 2016 to the cumulative total return, assuming reinvestment of dividends, of (1) S&P 500 Composite Stock Index (“S&P 500 Index”) and (2) the S&P 500 Property & Casualty Insurance Index. The share price performance presented below is not necessarily indicative of future results.

CUMULATIVE TOTAL SHAREHOLDER RETURN (1)(2)(3)



Company Name/Index	Base Period					
	12/31/11	12/31/12	12/31/13	12/31/14	12/31/15	12/31/16
● Arch Capital Group Ltd.	\$100.00	\$118.24	\$160.33	\$158.74	\$187.35	\$231.78
■ S&P 500 Index	\$100.00	\$116.00	\$153.57	\$174.60	\$177.01	\$198.18
▲ S&P 500 Property & Casualty Insurance Index	\$100.00	\$120.11	\$166.10	\$192.25	\$210.57	\$243.65

- (1) Stock price appreciation plus dividends.
- (2) The above graph assumes that the value of the investment was \$100 on December 31, 2011.
- (3) This graph is not “soliciting material,” is not deemed filed with the SEC and is not to be incorporated by reference in any filing by us under the Securities Act of 1933 or the Securities and Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

ITEM 6. SELECTED FINANCIAL DATA

The following tables set forth summary historical consolidated financial and operating data (including the results of the ‘other’ segment) and should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and the related notes.

(U.S. dollars in thousands except share data)	Year Ended December 31,				
	2016	2015	2014	2013	2012
Statement of Income Data: (1)					
Net premiums written	\$ 4,031,391	\$ 3,817,531	\$ 3,891,938	\$ 3,351,367	\$ 3,052,235
Net premiums earned	3,884,822	3,733,905	3,593,748	3,145,952	2,935,140
Net investment income	366,742	348,090	302,585	267,219	294,895
Equity in net income (loss) of investment funds accounted for using the equity method	48,475	25,455	19,883	35,701	73,510
Net realized gains (losses)	137,586	(185,842)	102,917	74,018	194,228
Total revenues	4,463,556	3,936,590	3,988,873	3,526,157	3,482,381
Income before income taxes	855,552	567,194	844,247	734,770	586,368
Net income	\$ 824,178	\$ 526,582	\$ 821,260	\$ 703,119	\$ 590,815
Net (income) loss attributable to noncontrolling interests	(131,440)	11,156	13,095	—	—
Net income available to Arch	692,738	537,738	834,355	703,119	590,815
Preferred dividends	(28,070)	(21,938)	(21,938)	(21,938)	(25,079)
Loss on repurchase of preferred shares	—	—	—	—	(10,612)
Net income available to Arch common shareholders	\$ 664,668	\$ 515,800	\$ 812,417	\$ 681,181	\$ 555,124
Diluted net income per share	\$ 5.33	\$ 4.09	\$ 6.02	\$ 5.02	\$ 4.02
Cash dividends per share	—	—	—	—	—
After-tax operating income available to Arch common shareholders (2)	\$ 577,444	\$ 565,199	\$ 617,312	\$ 589,103	\$ 348,058
After-tax operating income available to Arch common shareholders per share — diluted (2)	\$ 4.63	\$ 4.48	\$ 4.58	\$ 4.34	\$ 2.52
After-tax return on average common equity (3)	10.9%	8.9%	14.7%	13.5%	12.3%
After-tax operating return on average common equity (3)	9.4%	9.7%	11.2%	11.7%	7.7%
Weighted average common shares and common share equivalents outstanding — diluted (3)	124,717,493	126,038,743	134,922,322	135,777,183	138,258,847

- (1) Amounts reflect a cumulative effect of an accounting change. See note 1, “General,” of the notes accompanying our consolidated financial statements for additional information.
- (2) After-tax operating income available to Arch common shareholders is defined as net income available to Arch common shareholders, excluding net realized gains or losses, net impairment losses included in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses, UGC transaction costs and other and loss on repurchase of preferred shares, net of income taxes. The presentation of after-tax operating income available to Arch common shareholders is a “non-GAAP financial measure” as defined in Regulation G. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—General—Comment on Non-GAAP Financial Measures” for further details.
- (3) Equals after-tax operating income available to Arch common shareholders divided by the average of beginning and ending common shareholders’ equity for each period presented. For the 2016 period, the return on average common shareholders’ equity reflects the weighted impact of the \$1.10 billion of convertible non-voting common equivalent preferred shares, which were issued on December 31, 2016 as part of the UGC acquisition. For the 2015 and prior periods, the average common shareholders’ equity balances in each period reflect a cumulative effect of an accounting change. See note 1, “General,” of the notes accompanying our consolidated financial statements for additional information.

(U.S. dollars in thousands except share data)	December 31,				
	2016	2015	2014	2013	2012
Balance Sheet Data:					
Total investable assets (1)	\$ 20,493,952	\$ 16,340,938	\$ 15,762,730	\$ 14,049,525	\$ 13,045,134
Premiums receivable	1,072,435	983,443	948,695	753,924	688,873
Reinsurance recoverables on unpaid and paid losses and loss adjustment expenses	2,114,138	1,867,373	1,812,845	1,804,330	1,870,037
Total assets (2)	29,372,109	23,138,931	21,967,742	19,518,715	17,778,189
Reserves for losses and loss adjustment expenses:					
Before unpaid losses and loss adjustment expenses recoverable	10,200,960	9,125,250	9,036,448	8,824,696	8,933,292
Net of unpaid losses and loss adjustment expenses recoverable	8,117,385	7,296,413	7,258,145	7,076,446	7,104,222
Unearned premiums:					
Before ceded unearned premiums	3,406,870	2,333,932	2,231,578	1,896,365	1,647,978
Net of ceded unearned premiums	2,547,303	1,906,323	1,854,500	1,568,022	1,349,494
Senior notes	1,732,258	791,306	791,141	790,960	296,657
Revolving credit agreement borrowings	756,650	530,434	100,000	100,000	100,000
Total liabilities	20,060,984	16,028,376	14,887,435	13,909,558	12,644,541
Total shareholders' equity (2)	9,105,572	6,905,373	6,860,795	5,609,157	5,133,648
Total shareholders' equity available to Arch (2)	8,253,718	6,166,542	6,091,714	5,609,157	5,133,648
Preferred shareholders' equity	772,555	325,000	325,000	325,000	325,000
Common shareholders' equity available to Arch (2)	\$ 7,481,163	\$ 5,841,542	\$ 5,766,714	\$ 5,284,157	\$ 4,808,648
Common shares and common share equivalents outstanding, net of treasury shares (3)	135,550,337	122,627,783	127,367,934	133,674,884	133,842,613
Book value per share (2) (4)	\$ 55.19	\$ 47.64	\$ 45.28	\$ 39.53	\$ 35.93

- (1) This table excludes the collateral received and reinvested and includes the securities pledged under securities lending agreements, at fair value.
- (2) Balances for December 31, 2015 and prior periods reflect a cumulative effect of an accounting change. See note 1, "General," of the notes accompanying our consolidated financial statements for additional information.
- (3) Reflects the impact of the \$1.10 billion of convertible non-voting common equivalent preferred shares, which were issued on December 31, 2016 as part of the UGC acquisition.
- (4) Excludes the effects of stock options and restricted stock units.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis contains forward-looking statements which involve inherent risks and uncertainties. All statements other than statements of historical fact are forward-looking statements. These statements are based on our current assessment of risks and uncertainties. Actual results may differ materially from those expressed or implied in these statements and, therefore, undue reliance should not be placed on them. Important factors that could cause actual events or results to differ materially from those indicated in such statements are discussed in this report, including the sections entitled "Cautionary Note Regarding Forward-Looking Statements," and "Risk Factors."

This discussion and analysis should be read in conjunction with our audited consolidated financial statements and notes thereto presented under Item 8. Tabular amounts are in U.S. Dollars in thousands, except share amounts, unless otherwise noted.

GENERAL

OVERVIEW

Arch Capital Group Ltd. ("ACGL" and, together with its subsidiaries, "we" or "us") is a Bermuda public limited liability company with approximately \$10.49 billion in capital at December 31, 2016 and, through operations in Bermuda, the United States, Europe and Canada, writes specialty lines of property and casualty insurance and reinsurance, as well as mortgage insurance and reinsurance, on a worldwide basis. It is our belief that our underwriting platform, our experienced management team and our strong capital base have enabled us to establish a strong presence in the insurance and reinsurance markets.

The worldwide property casualty insurance and reinsurance industry is highly competitive and has traditionally been subject to an underwriting cycle in which a hard market (high premium rates, restrictive underwriting standards, as well as terms and conditions, and underwriting gains) is eventually followed by a soft market (low premium rates, relaxed underwriting standards, as well as broader terms and conditions, and underwriting losses). Property casualty market conditions may affect, among other things, the demand for our products, our ability to increase premium rates, the terms and conditions of the insurance policies we write, changes in the products offered by us or changes in our business strategy.

The financial results of the property casualty insurance and reinsurance industry are influenced by factors such as the frequency and/or severity of claims and losses, including natural disasters or other catastrophic events, variations in

interest rates and financial markets, changes in the legal, regulatory and judicial environments, inflationary pressures and general economic conditions. These factors influence, among other things, the demand for insurance or reinsurance, the supply of which is generally related to the total capital of competitors in the market.

Mortgage insurance and reinsurance is subject to similar cycles to property casualty except that they have historically been more dependent on macroeconomic conditions.

CURRENT OUTLOOK

The broad property casualty insurance market environment continues to be competitive in our property/casualty business, consistent with our view in prior quarters. In our insurance segment, we experienced a slight deterioration in rates across certain sectors, while there are signs that reinsurance terms, especially ceding commissions, have bottomed out. This has led us to continue to reduce writings in certain property casualty lines in 2016. With the continued low interest rate environment, additional price increases are needed in many lines in order for us to achieve our return requirements. Our underwriting teams continue to execute a disciplined strategy by emphasizing small and medium-sized accounts over large accounts and by utilizing reinsurance purchases to reduce volatility on large account, high capacity business.

Our mortgage operations continue to experience favorable market conditions. Within the U.S. mortgage insurance sector, we continued to expand into the marketplace. Our market share continued to increase, reflecting growth in the bank channel and the impact of RateStar, our risk-based pricing program, which has met with wide acceptance from bank and credit union clients. In addition, international business and credit risk-sharing transactions continue to provide growth opportunities for our mortgage operations.

In addition, on August 15, 2016, we entered into a Stock Purchase Agreement (the "Stock Purchase Agreement") with American International Group, Inc. ("AIG") pursuant to which we agreed to purchase from AIG all of the issued and outstanding shares of capital stock of United Guaranty Corporation, a North Carolina corporation ("UGC"). The acquisition under the Stock Purchase Agreement is referred to herein as the "UGC acquisition."

On December 31, 2016, the UGC acquisition was completed. As such, our balance sheet reflects the acquisition of UGC while our results of operations for 2016 do not include UGC activity other than the impact of capital raising activity and transaction

costs. The aggregate purchase price paid by ACGL was approximately \$3.26 billion, consisting of cash consideration of \$2.16 billion and convertible non-voting common-equivalent preference shares of ACGL with a fair value of \$1.10 billion.

Our objective is to achieve an average operating return on average equity of 15% or greater over the insurance cycle, as opposed to any one calendar year, which we believe to be an attractive return to our common shareholders given the risks we assume. We continue to look for opportunities to find acceptable books of business to underwrite without sacrificing underwriting discipline and continue to write a portion of our overall book in catastrophe-exposed business which has the potential to increase the volatility of our operating results.

Changing economic conditions could have a material impact on the frequency and severity of claims and, therefore, could negatively impact our underwriting returns. In addition, volatility in the financial markets could continue to significantly affect our investment returns, reported results and shareholders' equity. We consider the potential impact of economic trends in the estimation process for establishing unpaid losses and loss adjustment expenses and in determining our investment strategies. In addition, weakness of the U.S., European countries and other key economies, projected budget deficits for the U.S., European countries and other governments and the consequences associated with potential downgrades of securities of the U.S., European countries and other governments by credit rating agencies is inherently unpredictable and could have a material adverse effect on financial markets and economic conditions in the U.S. and throughout the world. In turn, this could have a material adverse effect on our business, financial condition and results of operations and, in particular, this could have a material adverse effect on the value and liquidity of securities in our investment portfolio.

NATURAL CATASTROPHE RISK

We monitor our natural catastrophe risk globally for all perils and regions, in each case, where we believe there is significant exposure. Our models employ both proprietary and vendor-based systems and include cross-line correlations for property, marine, offshore energy, aviation, workers compensation and personal accident. Currently, we seek to limit our 1-in-250 year return period net probable maximum pre-tax loss from a severe catastrophic event in any geographic zone to approximately 25% of total shareholders' equity available to Arch. We reserve the right to change this threshold at any time. Based on in-force exposure estimated as of January 1, 2017, our modeled peak zone catastrophe exposure is a windstorm affecting the Northeastern U.S., with a net probable maximum pre-tax loss of \$492 million, followed by windstorms affecting the Gulf of Mexico and Florida Tri-County with net probable maximum

pre-tax losses of \$427 million and \$394 million, respectively. Our exposures to other perils, such as U.S. earthquake and international events, were less than the exposures arising from U.S. windstorms and hurricanes in both periods. As of January 1, 2017, our modeled peak zone earthquake exposure (Los Angeles area earthquake) represented approximately 61% of our peak zone catastrophe exposure, and our modeled peak zone international exposure (Japan earthquake) was substantially less than both our peak zone windstorm and earthquake exposures.

Net probable maximum pre-tax loss estimates are net of expected reinsurance recoveries, before income tax and before excess reinsurance reinstatement premiums. Loss estimates are reflective of the zone indicated and not the entire portfolio. Since hurricanes and windstorms can affect more than one zone and make multiple landfalls, our loss estimates include clash estimates from other zones. The loss estimates shown above do not represent our maximum exposures and it is highly likely that our actual incurred losses would vary materially from the modeled estimates. There can be no assurances that we will not suffer a net loss greater than 25% of total shareholders' equity available to Arch from one or more catastrophic events due to several factors, including the inherent uncertainties in estimating the frequency and severity of such events and the margin of error in making such determinations resulting from potential inaccuracies and inadequacies in the data provided by clients and brokers, the modeling techniques and the application of such techniques or as a result of a decision to change the percentage of shareholders' equity exposed to a single catastrophic event. Actual losses may also increase if our reinsurers fail to meet their obligations to us or the reinsurance protections purchased by us are exhausted or are otherwise unavailable. See "Risk Factors—Risk Relating to Our Industry" and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Natural and Man-Made Catastrophic Events."

FINANCIAL MEASURES

Management uses the following three key financial indicators in evaluating our performance and measuring the overall growth in value generated for ACGL's common shareholders:

Book Value per Share

Book value per share represents total common shareholders' equity available to Arch divided by the number of common shares and common share equivalents outstanding. Management uses growth in book value per share as a key measure of the value generated for our common shareholders each period and believes that book value per share is the key driver of ACGL's share price over time. Book value per share is impacted by, among other factors, our underwriting results, investment returns and share repurchase activity, which has an

accretive or dilutive impact on book value per share depending on the purchase price. Book value per share was \$55.19 at December 31, 2016, a 15.8% increase from \$47.64 at December 31, 2015. The growth in 2016 was primarily generated through underwriting and investment returns and benefited from the accretive impact of fair valuing our convertible non-voting common equivalent preferred shares issued as part of the UGC acquisition.

Operating Return on Average Common Equity

Operating return on average common equity (“Operating ROAE”) represents annualized after-tax operating income available to Arch common shareholders divided by average common shareholders’ equity available to Arch during the period. After-tax operating income available to Arch common shareholders, a “non-GAAP measure” as defined in the SEC rules, represents net income available to Arch common shareholders, excluding net realized gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses and UGC transaction costs and other, net of income taxes. Management uses Operating ROAE as a key measure of the return generated to Arch common shareholders and has set an objective to achieve an average Operating ROAE of 15% or greater over the insurance cycle, as opposed to any one calendar year, which it believes to be an attractive return to common shareholders given the risks we assume. See “Comment on Non-GAAP Financial Measures.” Our Operating ROAE was 9.4% for 2016, compared to 9.7% for 2015 and 11.2% for 2014. The lower Operating ROAE for 2016 primarily reflected a higher level of average equity than in 2015, which more than offset a higher level of after-tax operating income.

Total Return on Investments

Total return on investments includes investment income, equity in net income or loss of investment funds accounted for using the equity method, net realized gains and losses and the change in unrealized gains and losses generated by Arch’s investment portfolio. Total return is calculated on a pre-tax basis and before investment expenses excluding amounts reflected in the ‘other’ segment, and reflects the effect of financial market conditions along with foreign currency fluctuations. Management uses total return on investments as a key measure of the return generated to Arch common shareholders on the capital held in the business, and compares the return generated by our investment portfolio against benchmark returns which we measured our portfolio against during the periods.

The following table summarizes the pre-tax total return (before investment expenses) of investment held by Arch compared to the benchmark return (both based in U.S. Dollars) against which we measured our portfolio during the periods:

	Arch Portfolio (1)	Benchmark Return
Pre-tax total return (before investment expenses):		
Year Ended December 31, 2016	2.07%	2.13%
Year Ended December 31, 2015	0.41%	-0.38%
Year Ended December 31, 2014	3.21%	2.58%

- (1) Our investment expenses were approximately 0.34%, 0.35% and 0.28%, respectively, of average invested assets in 2016, 2015 and 2014.

Total return for our investment portfolio underperformed that of the benchmark return index in 2016 and primarily reflected low investment returns on our investment grade fixed income portfolio, partially offset by strong returns on non-investment grade fixed income and alternatives. Total return was impacted by strengthening of the U.S. Dollar against a number of major currencies which reduced total return on non-U.S. Dollar denominated investments during 2016. Excluding foreign exchange, total return was 2.35% for 2016, compared to 1.62% for 2015 and 4.26% for 2014.

The benchmark return index is a customized combination of indices intended to approximate a target portfolio by asset mix and average credit quality while also matching the approximate estimated duration and currency mix of our insurance and reinsurance liabilities. Although the estimated duration and average credit quality of this index will move as the duration and rating of its constituent securities change, generally we do not adjust the composition of the benchmark return index except to incorporate changes to the mix of liability currencies and durations noted above. The benchmark return index should not be interpreted as expressing a preference for or aversion to any particular sector or sector weight. The index is intended solely to provide, unlike many master indices that change based on the size of their constituent indices, a relatively stable basket of investable indices. At December 31, 2016, the benchmark return index had an average credit quality of “Aa2” by Moody’s Investors Service (“Moody’s”), an estimated duration of 3.57 years.

The benchmark return index included weightings to the following indices, which are primarily from The Bank of America Merrill Lynch (“BoAML”):

	%
BoAML 1-10 Year AA U.S. Corporate & Yankees Index	21.25%
BoAML 1-5 Year U.S. Treasury Index	13.00
BoAML U.S. Mortgage Backed Securities Index	10.00
BoAML 3-5 Year Fixed Rate Asset Backed Securities Index	7.00
BoAML 1-10 Year U.S. Municipal Securities Index	7.00
BoAML U.S. High Yield Constrained Index	5.50
BoAML 0-3 Month U.S. Treasury Bill Index	5.00
Barclays CMBS Inv. Grade, AAA Rated Index	5.00
Barclays Agency Bullet, 1-10 Year Index	5.00
MSCI All Country World Gross Total Return Index	5.00
BoAML 1-10 Year Euro Government Index	4.50
BoAML 5-10 Year U.S. Treasury Index	3.25
BoAML 1-5 Year U.K. Gilt Index	3.00
BoAML 1-10 Year Australian Governments Index	2.50
BoAML 1-5 Year Canada Government Index	1.50
BoAML Euro Government Index	1.00
BoAML 20+ Year Canada Government Index	0.50
Total	100.00%

COMMENT ON NON-GAAP FINANCIAL MEASURES

Throughout this filing, we present our operations in the way we believe will be the most meaningful and useful to investors, analysts, rating agencies and others who use our financial information in evaluating the performance of our company. This presentation includes the use of after-tax operating income available to Arch common shareholders, which is defined as net income available to Arch common shareholders, excluding net realized gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses, UGC transaction costs and other and income taxes, and the use of annualized operating return on average common equity. The presentation of after-tax operating income available to Arch common shareholders and annualized operating return on average common equity are non-GAAP financial measures as defined in Regulation G. The reconciliation of such measures to net income available to Arch common shareholders and annualized return on average common equity (the most directly comparable GAAP financial measures) in accordance with Regulation G is included under “Results of Operations” below.

We believe that net realized gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses and UGC transaction costs and other in any particular period are not indicative of the performance of, or trends in, our business. Although net realized gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for

using the equity method and net foreign exchange gains or losses are an integral part of our operations, the decision to realize investment gains or losses, the recognition of the change in the carrying value of investments accounted for using the fair value option in net realized gains or losses, the recognition of net impairment losses, the recognition of equity in net income or loss of investment funds accounted for using the equity method and the recognition of foreign exchange gains or losses are independent of the insurance underwriting process and result, in large part, from general economic and financial market conditions. Furthermore, certain users of our financial information believe that, for many companies, the timing of the realization of investment gains or losses is largely opportunistic. In addition, net impairment losses recognized in earnings on our investments represent other-than-temporary declines in expected recovery values on securities without actual realization. The use of the equity method on certain of our investments in certain funds that invest in fixed maturity securities is driven by the ownership structure of such funds (either limited partnerships or limited liability companies). In applying the equity method, these investments are initially recorded at cost and are subsequently adjusted based on our proportionate share of the net income or loss of the funds (which include changes in the market value of the underlying securities in the funds). This method of accounting is different from the way we account for our other fixed maturity securities and the timing of the recognition of equity in net income or loss of investment funds accounted for using the equity method may differ from gains or losses in the future upon sale or maturity of such investments. UGC transaction costs and other include non-recurring advisory, financing, legal and other transaction costs related to the UGC acquisition and non-recurring expenses related to a change in our approach on the deferral of certain internal underwriting costs which are no longer being deferred. We believe that UGC transaction costs and other, due to their non-recurring nature, are not indicative of the performance of, or trends in, our business performance. Due to these reasons, we exclude net realized gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses and UGC transaction costs and other from the calculation of after-tax operating income available to Arch common shareholders.

We believe that showing net income available to Arch common shareholders exclusive of the items referred to above reflects the underlying fundamentals of our business since we evaluate the performance of and manage our business to produce an underwriting profit. In addition to presenting net income available to Arch common shareholders, we believe that this presentation enables investors and other users of our financial information to analyze our performance in a manner similar to how management analyzes performance. We also believe that this measure follows industry practice and, therefore, allows the users of financial information to compare our performance with our industry peer group. We believe that the equity analysts

and certain rating agencies which follow us and the insurance industry as a whole generally exclude these items from their analyses for the same reasons.

Our segment information includes the presentation of consolidated underwriting income or loss and a subtotal of underwriting income or loss before the contribution from the 'other' segment. Such measures represent the pre-tax profitability of our underwriting operations and include net premiums earned plus other underwriting income, less losses and loss adjustment expenses, acquisition expenses and other operating expenses. Other operating expenses include those operating expenses that are incremental and/or directly attributable to our individual underwriting operations. Underwriting income or loss does not incorporate items included in our corporate (non-underwriting) segment. While these measures are presented in Note 5, "Segment Information," of the notes accompanying our consolidated financial statements, they are considered non-GAAP financial measures when presented elsewhere on a consolidated basis. The reconciliations of underwriting income or loss to income before income taxes (the most directly comparable GAAP financial measure) on a consolidated basis and a subtotal before the contribution from the 'other' segment, in accordance with Regulation G, is shown in Note 5, "Segment Information" of the notes accompanying our consolidated financial statements.

We measure segment performance for our three underwriting segments based on underwriting income or loss. We do not manage our assets by underwriting segment, with the exception of goodwill and intangible assets, and, accordingly, investment income and other non-underwriting related items are not allocated to each underwriting segment. For the 'other' segment, performance is measured based on net income or loss.

Along with consolidated underwriting income, we provide a subtotal of underwriting income or loss before the contribution from the 'other' segment. Pursuant to generally accepted accounting principles, Watford Re is considered a variable interest entity and we concluded that we are the primary beneficiary of Watford Re. As such, we consolidate the results of Watford Re in our consolidated financial statements, although we only own approximately 11% of Watford Re's common equity. Watford Re has its own management and board of directors that is responsible for its overall profitability. In addition, we do not guarantee or provide credit support for Watford Re. Since Watford Re is an independent company, the assets of Watford Re can be used only to settle obligations of Watford Re and Watford Re is solely responsible for its own liabilities and commitments. Our financial exposure to Watford Re is limited to our investment in Watford Re's common and preferred shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions. We believe that presenting certain information excluding the 'other' segment enables investors and other users of our financial

information to analyze our performance in a manner similar to how our management analyzes performance.

Our presentation of segment information includes the use of a current year loss ratio which excludes favorable or adverse development in prior year loss reserves. This ratio is a non-GAAP financial measure as defined in Regulation G. The reconciliation of such measure to the loss ratio (the most directly comparable GAAP financial measure) in accordance with Regulation G is shown on the individual segment pages. Management utilizes the current year loss ratio in its analysis of the underwriting performance of each of our underwriting segments.

Total return on investments includes investment income, equity in net income or loss of investment funds accounted for using the equity method, net realized gains and losses and the change in unrealized gains and losses generated by Arch's investment portfolio. Total return is calculated on a pre-tax basis and before investment expenses, excludes amounts reflected in the 'other' segment, and reflects the effect of financial market conditions along with foreign currency fluctuations. In addition, total return incorporates the timing of investment returns during the periods. There is no directly comparable GAAP financial measure for total return. Management uses total return on investments as a key measure of the return generated to Arch common shareholders on the capital held in the business, and compares the return generated by our investment portfolio against benchmark returns which we measured our portfolio against during the periods.

RESULTS OF OPERATIONS

The following table summarizes our consolidated financial data, including a reconciliation of net income available to Arch common shareholders to after-tax operating income available to Arch common shareholders. Each line item reflects the impact of our approximate 11% ownership of Watford Re's common equity.

	Year Ended December 31,		
	2016	2015	2014
Net income available to Arch common shareholders	\$ 664,668	\$ 515,800	\$ 812,417
Net realized (gains) losses	(77,081)	108,690	(130,026)
Net impairment losses recognized in earnings	30,442	20,116	30,150
Equity in net (income) loss of investment funds accounted for using the equity method	(48,475)	(25,456)	(19,883)
Net foreign exchange (gains) losses	(31,987)	(63,011)	(82,777)
UGC transaction costs and other	41,729	—	—
Income tax expense (benefit)	(1,852)	9,060	7,431
After-tax operating income available to Arch common shareholders	\$ 577,444	\$ 565,199	\$ 617,312
Beginning common shareholders' equity	\$ 5,841,542	\$ 5,766,714	\$ 5,284,157
Ending common shareholders' equity	7,481,163	5,841,542	5,766,714
Average common shareholders' equity (1)	\$ 6,113,718	\$ 5,804,128	\$ 5,525,436
Annualized return on average common equity %	10.9	8.9	14.7
Annualized operating return on average common equity %	9.4	9.7	11.2

(1) Average common shareholders' equity and the related returns on average common equity reflect the weighted impact of the \$1.10 billion of convertible non-voting common equivalent preferred shares, which were issued on December 31, 2016 as part of the UGC acquisition.

Results in all periods presented reflected the impact of current insurance and reinsurance market conditions and the impact of low interest yields on our investment portfolio.

Segment Information

We classify our businesses into three underwriting segments — insurance, reinsurance and mortgage — and two other operating segments — corporate (non-underwriting) and 'other.' Our insurance, reinsurance and mortgage segments each have managers who are responsible for the overall profitability of their respective segments and who are directly accountable to our chief operating decision makers, the Chairman and Chief

Executive Officer, the President and Chief Operating Officer, and the Chief Financial Officer of ACGL. The chief operating decision makers do not assess performance, measure return on equity or make resource allocation decisions on a line of business basis. Management measures segment performance for our three underwriting segments based on underwriting income or loss. We do not manage our assets by underwriting segment, with the exception of goodwill and intangible assets, and, accordingly, investment income is not allocated to each underwriting segment.

We determined our reportable segments using the management approach described in accounting guidance regarding disclosures about segments of an enterprise and related information. The accounting policies of the segments are the same as those used for the preparation of our consolidated financial statements. Intersegment business is allocated to the segment accountable for the underwriting results.

Insurance Segment

The following table sets forth our insurance segment's underwriting results:

	Year Ended December 31,		
	2016	2015	% Change
Gross premiums written	\$ 3,027,049	\$ 2,944,018	2.8
Premiums ceded	(954,768)	(898,347)	
Net premiums written	2,072,281	2,045,671	1.3
Change in unearned premiums	1,623	(863)	
Net premiums earned	2,073,904	2,044,808	1.4
Other underwriting income	—	1,993	
Losses and loss adjustment expenses	(1,359,313)	(1,292,647)	
Acquisition expenses	(304,066)	(299,317)	
Other operating expenses	(353,782)	(354,416)	
Underwriting income (loss)	\$ 56,743	\$ 100,421	(43.5)
Underwriting Ratios			% Point Change
Loss ratio	65.5%	63.2%	2.3
Acquisition expense ratio	14.7%	14.6%	0.1
Other operating expense ratio	17.1%	17.3%	(0.2)
Combined ratio	97.3%	95.1%	2.2

	Year Ended December 31,		
	2015	2014	% Change
Gross premiums written	\$ 2,944,018	\$ 3,008,669	(2.1)
Premiums ceded	(898,347)	(862,015)	
Net premiums written	2,045,671	2,146,654	(4.7)
Change in unearned premiums	(863)	(129,284)	
Net premiums earned	2,044,808	2,017,370	1.4
Other underwriting income	1,993	2,135	
Losses and loss adjustment expenses	(1,292,647)	(1,260,953)	
Acquisition expenses	(299,317)	(316,308)	
Other operating expenses	(354,416)	(335,157)	
Underwriting income (loss)	\$ 100,421	\$ 107,087	(6.2)
Underwriting Ratios			% Point Change
Loss ratio	63.2%	62.5%	0.7
Acquisition expense ratio	14.6%	15.7%	(1.1)
Other operating expense ratio	17.3%	16.6%	0.7
Combined ratio	95.1%	94.8%	0.3

The insurance segment consists of our insurance underwriting units which offer specialty product lines on a worldwide basis. Product lines include:

- *Construction and national accounts:* primary and excess casualty coverages to middle and large accounts in the construction industry and a wide range of products for middle and large national accounts, specializing in loss sensitive primary casualty insurance programs (including large deductible, self-insured retention and retrospectively rated programs).
- *Excess and surplus casualty:* primary and excess casualty insurance coverages, including middle market energy business, and contract binding, which primarily provides casualty coverage through a network of appointed agents to small and medium risks.
- *Lenders products:* collateral protection, debt cancellation and service contract reimbursement products to banks, credit unions, automotive dealerships and original equipment manufacturers and other specialty programs that pertain to automotive lending and leasing.
- *Professional lines:* directors' and officers' liability, errors and omissions liability, employment practices liability, fiduciary liability, crime, professional indemnity and other financial related coverages for corporate, private equity, venture capital, real estate investment trust, limited partnership, financial institution and not-for-profit clients of all sizes and medical professional and general liability insurance coverages for the healthcare industry. The business is predominately written on a claims-made basis.
- *Programs:* primarily package policies, underwriting workers' compensation and umbrella liability business in support of desirable package programs, targeting program managers with unique expertise and niche products

offering general liability, commercial automobile, inland marine and property business with minimal catastrophe exposure.

- *Property, energy, marine and aviation:* primary and excess general property insurance coverages, including catastrophe-exposed property coverage, for commercial clients. Coverages for marine include hull, war, specie and liability. Aviation and stand-alone terrorism are also offered.
- *Travel, accident and health:* specialty travel and accident and related insurance products for individual, group travelers, travel agents and suppliers, as well as accident and health, which provides accident, disability and medical plan insurance coverages for employer groups, medical plan members, students and other participant groups.
- *Other:* includes alternative market risks (including captive insurance programs), excess workers' compensation and employer's liability insurance coverages for qualified self-insured groups, associations and trusts, and contract and commercial surety coverages, including contract bonds (payment and performance bonds) primarily for medium and large contractors and commercial surety bonds for Fortune 1000 companies and smaller transaction business programs.

Premiums Written.

The following table sets forth our insurance segment's net premiums written by major line of business:

	Year Ended December 31,			
	2016		2015	
	Amount	%	Amount	%
Professional lines	\$ 440,149	21.2	\$ 434,024	21.2
Construction and national accounts	328,997	15.9	299,463	14.6
Programs	330,322	15.9	423,157	20.7
Travel, accident and health	224,380	10.8	160,132	7.8
Excess and surplus casualty	214,863	10.4	204,856	10.0
Property, energy, marine and aviation	175,376	8.5	203,186	9.9
Lenders products	105,650	5.1	106,916	5.2
Other	252,544	12.2	213,937	10.5
Total	\$2,072,281	100.0	\$2,045,671	100.0

2016 versus 2015: Net premiums written by the insurance segment were 1.3% higher in 2016 than in 2015. The increase in net premiums written reflected growth in travel, accident and health, construction and national accounts and alternative markets business, partially offset by a reduction in programs and property lines. The growth in travel, accident and health reflected both new business and continued expansion in existing accounts. The increase in construction and national accounts

primarily reflected new business and audit premiums while the increase in alternative markets resulted from new accounts, exposure growth and audit premiums. The reduction in program business primarily reflected the continued impact of the non-renewal of a large program in the latter part of 2015 while the lower level of net premiums written in property lines reflected continued weak market conditions.

	Year Ended December 31,			
	2015		2014	
	Amount	%	Amount	%
Professional lines	\$ 434,024	21.2	\$ 476,604	22.2
Construction and national accounts	299,463	14.6	286,994	13.4
Programs	423,157	20.7	480,580	22.4
Travel, accident and health	160,132	7.8	145,732	6.8
Excess and surplus casualty	204,856	10.0	212,519	9.9
Property, energy, marine and aviation	203,186	9.9	244,640	11.4
Lenders products	106,916	5.2	100,407	4.7
Other	213,937	10.5	199,178	9.3
Total	\$2,045,671	100.0	\$2,146,654	100.0

2015 versus 2014: Net premiums written by the insurance segment were 4.7% lower in 2015 than in 2014. Decreases in programs, property, energy, marine and aviation and professional lines were partially offset by increases in travel, accident and health and construction and national accounts. The reduction in program business primarily reflected the non-renewal of a large program and underwriting decisions to terminate two programs while the lower level of property, energy, marine and aviation and professional lines reflected the timing of premiums and market conditions. Growth in travel, accident and health reflects primarily resulted from expansion in existing and new distribution channels while the increase in construction and national accounts included new business and higher audit and endorsement premium on national accounts.

Net Premiums Earned.

The following table sets forth our insurance segment's net premiums earned by major line of business:

	Year Ended December 31,			
	2016		2015	
	Amount	%	Amount	%
Professional lines	\$ 431,391	20.8	\$ 424,968	20.8
Construction and national accounts	322,072	15.5	296,828	14.5
Programs	357,715	17.2	446,512	21.8
Travel, accident and health	219,169	10.6	153,578	7.5
Excess and surplus casualty	219,046	10.6	208,091	10.2
Property, energy, marine and aviation	188,938	9.1	216,127	10.6
Lenders products	98,517	4.8	90,906	4.4
Other	237,056	11.4	207,798	10.2
Total	\$2,073,904	100.0	\$2,044,808	100.0

	Year Ended December 31,			
	2015		2014	
	Amount	%	Amount	%
Professional lines	\$ 424,968	20.8	\$ 456,508	22.6
Construction and national accounts	296,828	14.5	277,811	13.8
Programs	446,512	21.8	460,392	22.8
Travel, accident and health	153,578	7.5	127,691	6.3
Excess and surplus casualty	208,091	10.2	182,024	9.0
Property, energy, marine and aviation	216,127	10.6	244,974	12.1
Lenders products	90,906	4.4	94,438	4.7
Other	207,798	10.2	173,532	8.6
Total	\$2,044,808	100.0	\$2,017,370	100.0

Net premiums earned by the insurance segment were 1.4% higher in 2016 than in 2015, reflecting changes in net premiums written over the previous five quarters. Net premiums earned by the insurance segment were 1.4% higher in 2015 than in 2014.

Losses and Loss Adjustment Expenses.

The table below shows the components of the insurance segment's loss ratio:

	Year Ended December 31,		
	2016	2015	2014
Current year	67.1 %	65.5 %	65.4 %
Prior period reserve development	(1.6)%	(2.3)%	(2.9)%
Loss ratio	65.5 %	63.2 %	62.5 %

Current Year Loss Ratio.

2016 versus 2015: The insurance segment's current year loss ratio was 1.6 points higher in 2016 than in 2015. The 2016 loss ratio included 2.2 points of current year catastrophic event activity, compared to 1.0 points in 2015. The 2016 loss ratio reflected changes in the mix of business.

2015 versus 2014: The insurance segment's current year loss ratio was 0.1 points higher in 2015 than in 2014. The 2015 loss ratio included 1.0 points of current year catastrophic event activity, compared to 0.7 points in 2014. The 2015 loss ratio reflected changes in the mix of business.

Prior Period Reserve Development.

2016 prior period reserve development: The insurance segment's net favorable development of \$33.1 million, or 1.6 points of net earned premium, consisted of \$8.7 million of net favorable development from short-tailed lines and \$24.4 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines predominantly consisted of \$17.2 million of net favorable development in property lines, primarily from the 2008 to 2014 accident years (*i.e.*, the year in which a loss occurred), partially offset by \$11.1 million of adverse development on travel, accident and health business from the 2012 to 2015 accident years. Contained within the short tail release in property lines was favorable development of \$11.3 million from named catastrophic events from prior accident years. Net favorable development in medium-tailed and long-tailed lines of \$24.4 million included \$53.8 million of net favorable development on professional lines, primarily from the 2008 to 2012 accident years, partially offset by \$33.1 million of net adverse development in program business, primarily from the 2013 to 2015 accident years. The adverse development in program business was driven by a few inactive programs that were non-renewed in 2015 and early in 2016.

2015 prior period reserve development: The insurance segment's net favorable development of \$47.2 million, or 2.3 points of net earned premium, consisted of \$27.3 million of net favorable development from short-tailed lines and \$19.9 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines predominantly consisted of \$32.4 million of net favorable development in property lines, primarily from the 2011 to 2014 accident years. Contained within this short tail release was favorable development of \$5.7 million from named catastrophic events from prior accident years. Net favorable development in medium-tailed and long-tailed lines of \$19.9 million included \$29.7 million of net favorable development on professional lines, primarily from the 2005 to 2010 accident years, partially offset by \$15.0 million of net adverse development in program business, primarily from the 2013 and 2014 accident years. The adverse development in program business was driven by a few

inactive programs that were non-renewed in 2015 and early in 2016.

2014 prior period reserve development: The insurance segment's net favorable development of \$58.7 million, or 2.9 points of net earned premium, consisted of \$73.5 million of net favorable development from short-tailed lines, partially offset by \$14.8 million of net adverse development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines predominantly consisted of \$60.5 million of net favorable development in property lines, primarily from the 2008 to 2013 accident years, with the balance emanating from lenders products, primarily from the 2012 accident year, and travel and accident, primarily from the 2012 and 2013 accident years. Contained within this short tail release was favorable development of \$7.9 million from named catastrophic events from prior accident years. Net adverse development in medium-tailed and long-tailed lines of \$14.8 million included a net increase of \$41.3 million in construction reserves, primarily from the 2009 to 2013 accident years. The adverse development in construction was largely driven by general liability claims involving New York labor law matters. In addition, the insurance segment experienced \$26.2 million of net adverse development in program business, primarily from the 2011 and 2012 accident years. Such amounts were partially offset by \$39.0 million of net favorable development on professional lines, primarily from the 2003 to 2011 accident years, and \$7.8 million of net favorable development on surety business, primarily from the 2011 to 2013 accident years.

Underwriting Expenses.

2016 versus 2015: The insurance segment's underwriting expense ratio was 31.8% in 2016, compared to 31.9% in 2015. The acquisition expense ratio was 14.7% for 2016, compared to 14.6% for 2015. The insurance segment's other operating expense ratio was 17.1% for 2016, compared to 17.3% for 2015. The comparison of the underwriting expense ratios and the underlying acquisition expense and other operating expense ratios were generally flat in 2016 when compared to 2015.

2015 versus 2014: The insurance segment's underwriting expense ratio was 31.9% in 2015, compared to 32.3% in 2014. The acquisition expense ratio was 14.6% for 2015, compared to 15.7% for 2014. The insurance segment's other operating expense ratio was 17.3% for 2015, compared to 16.6% for 2014. The comparison of the underwriting expense ratios and the underlying acquisition expense and other operating expense ratios reflects an increase in the level of business ceded on a quota share basis in 2015 and changes in the mix business.

Reinsurance Segment

The following table sets forth our reinsurance segment's underwriting results:

	Year Ended December 31,		
	2016	2015	% Change
Gross premiums written	\$ 1,494,397	\$ 1,419,022	5.3
Premiums ceded	(440,541)	(380,614)	
Net premiums written	1,053,856	1,038,408	1.5
Change in unearned premiums	2,376	38,727	
Net premiums earned	1,056,232	1,077,135	(1.9)
Other underwriting income	36,403	10,606	
Losses and loss adjustment expenses	(475,762)	(440,350)	
Acquisition expenses	(212,375)	(223,632)	
Other operating expenses	(143,408)	(155,811)	
Underwriting income	\$ 261,090	\$ 267,948	(2.6)

			% Point Change
Underwriting Ratios			
Loss ratio	45.0%	40.9%	4.1
Acquisition expense ratio	20.1%	20.8%	(0.7)
Other operating expense ratio	13.6%	14.5%	(0.9)
Combined ratio	78.7%	76.2%	2.5

	Year Ended December 31,		
	2015	2014	% Change
Gross premiums written	\$ 1,419,022	\$ 1,527,245	(7.1)
Premiums ceded	(380,614)	(261,254)	
Net premiums written	1,038,408	1,265,991	(18.0)
Change in unearned premiums	38,727	13,337	
Net premiums earned	1,077,135	1,279,328	(15.8)
Other underwriting income	10,606	3,167	
Losses and loss adjustment expenses	(440,350)	(532,450)	
Acquisition expenses	(223,632)	(261,438)	
Other operating expenses	(155,811)	(147,964)	
Underwriting income	\$ 267,948	\$ 340,643	(21.3)

			% Point Change
Underwriting Ratios			
Loss ratio	40.9%	41.6%	(0.7)
Acquisition expense ratio	20.8%	20.4%	0.4
Other operating expense ratio	14.5%	11.6%	2.9
Combined ratio	76.2%	73.6%	2.6

The reinsurance segment consists of our reinsurance underwriting units which offer specialty product lines on a worldwide basis. Product lines include:

- Casualty:** provides coverage to ceding company clients on third party liability and workers' compensation exposures from ceding company clients, primarily on a treaty basis. Exposures include, among others, executive assurance, professional liability, workers' compensation, excess and umbrella liability, excess motor and healthcare business.
- Marine and aviation:** provides coverage for energy, hull, cargo, specie, liability and transit, and aviation business, including airline and general aviation risks. Business written may also include space business, which includes coverages for satellite assembly, launch and operation for commercial space programs.
- Other specialty:** provides coverage to ceding company clients for proportional motor and other lines, including surety, accident and health, workers' compensation catastrophe, agriculture, trade credit and political risk.
- Property catastrophe:** provides protection for most catastrophic losses that are covered in the underlying policies written by reinsureds, including hurricane, earthquake, flood, tornado, hail and fire, and coverage for other perils on a case-by-case basis. Property catastrophe reinsurance provides coverage on an excess of loss basis when aggregate losses and loss adjustment expense from a single occurrence or aggregation of losses from a covered peril exceed the retention specified in the contract.
- Property excluding property catastrophe:** provides coverage for both personal lines and commercial property exposures and principally covers buildings, structures, equipment and contents. The primary perils in this business include fire, explosion, collapse, riot, vandalism, wind, tornado, flood and earthquake. Business is assumed on both a proportional and excess of loss basis. In addition, facultative business is written which focuses on individual commercial property risks on an excess of loss basis.
- Other:** includes life reinsurance business on both a proportional and non-proportional basis, casualty clash business and, in limited instances, non-traditional business which is intended to provide insurers with risk management solutions that complement traditional reinsurance.

Premiums Written.

The following table sets forth our reinsurance segment's net premiums written by major line of business:

	Year Ended December 31,			
	2016		2015	
	Amount	%	Amount	%
Other specialty	\$ 348,852	33.1	\$ 298,794	28.8
Casualty	305,252	29.0	303,093	29.2
Property excluding property catastrophe	267,548	25.4	280,511	27.0
Property catastrophe	75,789	7.2	91,620	8.8
Marine and aviation	37,790	3.6	50,834	4.9
Other	18,625	1.8	13,556	1.3
Total	<u>\$1,053,856</u>	<u>100.0</u>	<u>\$1,038,408</u>	<u>100.0</u>
Pro rata	\$ 558,671	53.0	\$ 537,556	51.8
Excess of loss	495,185	47.0	500,852	48.2
Total	<u>\$1,053,856</u>	<u>100.0</u>	<u>\$1,038,408</u>	<u>100.0</u>

2016 versus 2015: Gross premiums written by the reinsurance segment in 2016 were 5.3% higher than in 2015, while net premiums written were 1.5% higher than in 2015. Premiums written reflects the 2016 second quarter loss portfolio transfer in the other specialty line which resulted in \$52.1 million of gross premiums written and \$40.2 million of net premiums written. Such premium was substantially earned in the period and resulted in a corresponding increase to losses and loss adjustment expenses. Excluding the loss portfolio transfer, net premiums written were lower by 2.4%, reflecting decreases in property (both catastrophe and non-catastrophe exposed) and marine and aviation lines, reflecting a higher level of ceded premiums and competitive market conditions.

	Year Ended December 31,			
	2015		2014	
	Amount	%	Amount	%
Other specialty	\$ 298,794	28.8	\$ 405,126	32.0
Casualty	303,093	29.2	317,996	25.1
Property excluding property catastrophe	280,511	27.0	343,043	27.1
Property catastrophe	91,620	8.8	137,471	10.9
Marine and aviation	50,834	4.9	50,444	4.0
Other	13,556	1.3	11,911	0.9
Total	<u>\$1,038,408</u>	<u>100.0</u>	<u>\$1,265,991</u>	<u>100.0</u>
Pro rata	\$ 537,556	51.8	\$ 663,135	52.4
Excess of loss	500,852	48.2	602,856	47.6
Total	<u>\$1,038,408</u>	<u>100.0</u>	<u>\$1,265,991</u>	<u>100.0</u>

2015 versus 2014: Gross premiums written by the reinsurance segment in 2015 were 7.1% lower than in 2014, while net premiums written were 18.0% lower than in 2014. The differential in gross versus net premiums written primarily reflects increased cessions to the 'other' segment (Watford Re) in 2015 compared to 2014. In addition, the decline in net premiums written reflected reductions in property lines and

other specialty business. The reduction in property catastrophe business reflected non-renewals and share decreases in response to current market conditions and a higher usage of retrocessional coverage. In addition, property excluding property catastrophe business in 2014 included an incoming unearned premium portfolio transfer of \$50.2 million from Gulf Reinsurance Limited ("Gulf Re") which we subsequently acquired in 2015. The decrease in other specialty business reflected non-renewals and share decreases in response to current market conditions, primarily in proportional motor contracts.

Net Premiums Earned.

The following table sets forth our reinsurance segment's net premiums earned by major line of business:

	Year Ended December 31,			
	2016		2015	
	Amount	%	Amount	%
Other specialty	\$ 329,994	31.2	\$ 311,307	28.9
Casualty	300,160	28.4	310,249	28.8
Property excluding property catastrophe	282,018	26.7	295,487	27.4
Property catastrophe	73,803	7.0	96,865	9.0
Marine and aviation	52,579	5.0	50,808	4.7
Other	17,678	1.7	12,419	1.2
Total	<u>\$1,056,232</u>	<u>100.0</u>	<u>\$1,077,135</u>	<u>100.0</u>
Pro rata	\$ 561,986	53.2	\$ 563,585	52.3
Excess of loss	494,246	46.8	513,550	47.7
Total	<u>\$1,056,232</u>	<u>100.0</u>	<u>\$1,077,135</u>	<u>100.0</u>

	Year Ended December 31,			
	2015		2014	
	Amount	%	Amount	%
Other specialty	\$ 311,307	28.9	\$ 424,725	33.2
Casualty	310,249	28.8	327,518	25.6
Property excluding property catastrophe	295,487	27.4	303,496	23.7
Property catastrophe	96,865	9.0	150,761	11.8
Marine and aviation	50,808	4.7	61,118	4.8
Other	12,419	1.2	11,710	0.9
Total	<u>\$1,077,135</u>	<u>100.0</u>	<u>\$1,279,328</u>	<u>100.0</u>
Pro rata	\$ 563,585	52.3	\$ 686,201	53.6
Excess of loss	513,550	47.7	593,127	46.4
Total	<u>\$1,077,135</u>	<u>100.0</u>	<u>\$1,279,328</u>	<u>100.0</u>

Net premiums earned in 2016 were 1.9% lower than in 2015, reflecting changes in net premiums written over the previous five quarters, including the mix and type of business written and a higher level of retrocessions. Net premiums earned in 2015 were 15.8% lower than in 2014.

Other Underwriting Income.

Other underwriting income in 2016 was \$36.4 million, compared to \$10.6 million in 2015 and \$3.2 million in 2014. The 2016 period included \$19.1 million related to a contract which was commuted during the 2016 second quarter. This contract had been reflected as a deposit accounting liability (*i.e.*, a contract that, in accordance with GAAP, does not pass risk transfer) prior to the commutation.

Losses and Loss Adjustment Expenses.

The table below shows the components of the reinsurance segment's loss ratio:

	Year Ended December 31,		
	2016	2015	2014
Current year	65.7 %	61.8 %	62.5 %
Prior period reserve development	(20.7)%	(20.9)%	(20.9)%
Loss ratio	45.0 %	40.9 %	41.6 %

Current Year Loss Ratio.

2016 versus 2015: The reinsurance segment's current year loss ratio was 3.9 points higher in 2016 than in 2015. The 2016 loss ratio included 4.1 points for current year catastrophic event activity, compared to 3.5 points in 2015. The 2016 current year loss ratio reflected a significantly lower contribution from property lines than in 2015. In addition, the loss ratio for 2016 reflects the impact of the loss portfolio transfer noted above (net premiums earned at a high loss ratio), which increased the current year loss ratio by 2.1 points.

2015 versus 2014: The reinsurance segment's current year loss ratio was 0.7 points lower in 2015 than in 2014. The 2015 loss ratio included 3.5 points for current year catastrophic event activity, compared to 3.5 points in 2014. The 2015 current year loss ratio reflected a significantly lower contribution from property lines than in 2014.

Prior Period Reserve Development.

2016 prior period reserve development: The reinsurance segment's net favorable development of \$218.8 million, or 20.7 points of net earned premium, consisted of \$133.8 million from short-tailed lines and \$85.0 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines included \$113.6 million from property catastrophe and property other than property catastrophe reserves, primarily from the 2009 to 2015 underwriting years (*i.e.*, losses attributable to contracts having an inception or renewal date within the given twelve-month period). Contained within this release was favorable development of \$8.7 million from named catastrophic events from prior accident years. The net reduction of loss estimates for the reinsurance segment's short-tailed lines primarily resulted from varying levels of reported and paid claims activity

than previously anticipated which led to decreases in certain loss ratio selections during 2016. Net favorable development of \$85.0 million in medium-tailed and long-tailed lines included reductions in casualty reserves of \$86.1 million, primarily from the 2002 to 2013 underwriting years.

2015 prior period reserve development: The reinsurance segment's net favorable development of \$224.8 million, or 20.9 points of net earned premium, consisted of \$107.6 million from short-tailed lines and \$117.2 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines included \$80.9 million from property catastrophe and property other than property catastrophe reserves, primarily from the 2011 to 2014 underwriting years. Contained within this release was favorable development of \$11.8 million from named catastrophic events from prior accident years. The net reduction of loss estimates for the reinsurance segment's short-tailed lines primarily resulted from varying levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during 2015. Net favorable development of \$117.2 million in medium-tailed and long-tailed lines included reductions in casualty reserves of \$99.7 million, primarily from the 2003 to 2006 underwriting years and the 2008 and 2009 underwriting years, and marine and aviation reserves of \$11.7 million, primarily from the 2008 to 2012 underwriting years. The balance of net favorable development was spread across various lines and underwriting years.

2014 prior period reserve development: The reinsurance segment's net favorable development of \$267.3 million, or 20.9 points of net earned premium, consisted of \$146.7 million from short-tailed lines and \$120.6 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines included \$107.6 million from property catastrophe and property other than property catastrophe reserves, primarily from the 2011 to 2013 underwriting years. Contained within this release was favorable development of \$23.3 million from the named catastrophic events from prior accident years. The net reduction of loss estimates for the reinsurance segment's short-tailed lines primarily resulted from varying levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during 2014. Net favorable development of \$120.6 million in medium-tailed and long-tailed lines included reductions in casualty reserves of \$101.6 million, primarily from the 2003 to 2006 underwriting years and the 2009 and 2010 underwriting years, and marine and aviation reserves of \$14.7 million, primarily from the 2008 to 2012 underwriting years. The balance of net favorable development was spread across various lines and underwriting years.

Underwriting Expenses.

2016 versus 2015: The underwriting expense ratio for the reinsurance segment was 33.7% in 2016, compared to 35.3% in 2015. The 2016 ratio reflected approximately 1.3 points of benefit from the loss portfolio transfer noted above (net premiums earned with no related expenses). The acquisition expense ratio for 2016 was 20.1%, compared to 20.8% for 2015 while the operating expense ratio for 2016 was 13.6%, compared to 14.5% for 2015.

2015 versus 2014: The underwriting expense ratio for the reinsurance segment was 35.3% in 2015, compared to 32.0% in 2014. The acquisition expense ratio for 2015 was 20.8%, compared to 20.4% for 2014. The comparison of the 2015 and 2014 acquisition expense ratios is influenced by, among other things, the mix and type of business written and earned and the level of ceding commissions incurred. The operating expense ratio for 2015 of 14.5% was higher than the 2014 ratio of 11.6% primarily reflecting a lower level of net premiums earned.

Mortgage Segment

Our mortgage operations include U.S. and international mortgage insurance and reinsurance operations as well as GSE credit risk sharing transactions. Our mortgage group includes direct mortgage insurance in the U.S. primarily provided by Arch Mortgage Insurance Company (“AMIC”) and operating subsidiaries of UGC as well as through Arch Mortgage Guaranty Company; mortgage reinsurance provided primarily by Arch Re Bermuda to mortgage insurers on both a proportional and non-proportional basis globally; direct mortgage insurance in Europe provided by Arch Mortgage Insurance Designated Activity Company (“Arch MI Europe”); and various GSE credit risk-sharing products provided primarily by Arch Re Bermuda.

AMIC, United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company have each been approved as an eligible mortgage insurer by Fannie Mae and Freddie Mac, subject to maintaining certain ongoing requirements.

The UGC acquisition was completed on December 31, 2016. As such, the mortgage segment’s results for 2016 do not reflect UGC activity.

The following table sets forth our mortgage segment’s underwriting results:

	Year Ended December 31,		
	2016	2015	% Change
Gross premiums written	\$ 499,725	\$ 295,557	69.1
Premiums ceded	(108,259)	(28,064)	
Net premiums written	391,466	267,493	46.3
Change in unearned premiums	(104,750)	(53,383)	
Net premiums earned	286,716	214,110	33.9
Other underwriting income	17,024	18,430	
Losses and loss adjustment expenses	(28,943)	(40,247)	
Acquisition expenses	(32,065)	(45,076)	
Other operating expenses	(101,293)	(82,370)	
Underwriting income	\$ 141,439	\$ 64,847	118.1
Underwriting Ratios			% Point Change
Loss ratio	10.1%	18.8%	(8.7)
Acquisition expense ratio	11.2%	21.1%	(9.9)
Other operating expense ratio	35.3%	38.5%	(3.2)
Combined ratio	56.6%	78.4%	(21.8)

	Year Ended December 31,		
	2015	2014	% Change
Gross premiums written	\$ 295,557	\$ 227,356	30.0
Premiums ceded	(28,064)	(22,519)	
Net premiums written	267,493	204,837	30.6
Change in unearned premiums	(53,383)	(11,264)	
Net premiums earned	214,110	193,573	10.6
Other underwriting income	18,430	4,840	
Losses and loss adjustment expenses	(40,247)	(55,674)	
Acquisition expenses	(45,076)	(49,400)	
Other operating expenses	(82,370)	(66,891)	
Underwriting income	\$ 64,847	\$ 26,448	145.2
Underwriting Ratios			% Point Change
Loss ratio	18.8%	28.8%	(10.0)
Acquisition expense ratio	21.1%	25.5%	(4.4)
Other operating expense ratio	38.5%	34.6%	3.9
Combined ratio	78.4%	88.9%	(10.5)

Premiums Written.

The following table sets forth our mortgage segment's net premiums written by client location and underwriting location (*i.e.*, where the business is underwritten):

	Year Ended December 31,		
	2016	2015	2014
Net premiums written by client location			
United States	\$ 280,509	\$ 193,617	\$ 184,333
Other	110,957	73,876	20,504
Total	<u>\$ 391,466</u>	<u>\$ 267,493</u>	<u>\$ 204,837</u>
Net premiums written by underwriting location			
United States	\$ 186,826	\$ 125,317	\$ 98,809
Other	204,640	142,176	106,028
Total	<u>\$ 391,466</u>	<u>\$ 267,493</u>	<u>\$ 204,837</u>

2016 versus 2015: Gross premiums written by the mortgage segment in 2016 were 69.1% higher than in 2015, reflecting growth in Australian mortgage reinsurance, in U.S. primary business and from GSE credit risk-sharing transactions receiving insurance accounting treatment. The lower increase in net premiums written of 46.3% reflected retrocessions on Australian mortgage reinsurance business covering exposures written since May 2015, including a substantial portion representing catch up premiums.

The persistency rate of the U.S. primary portfolio of mortgage loans (combined AMIC and UGC) was 76.1% at December 31, 2016. The persistency rate represents the percentage of mortgage insurance in force at the beginning of a 12-month period that remains in force at the end of such period. In addition, net premiums written in 2016 reflected an increase in GSE credit risk-sharing transactions accounted for under insurance accounting guidance.

2015 versus 2014: Net premiums written in 2015 included new Australian mortgage reinsurance business, which is primarily a single premium market, and an increase in business written by AMIC compared to 2014.

AMIC generated \$26.87 billion of new insurance written ("NIW") during 2016. NIW represents the original principal balance of all loans that received coverage during the period.

Net Premiums Earned.

The following table sets forth our mortgage segment's net premiums earned by client location and underwriting location (*i.e.*, where the business is underwritten):

	Year Ended December 31,		
	2016	2015	2014
Net premiums earned by client location			
United States	\$ 265,527	\$ 202,930	\$ 187,194
Other	21,189	11,180	6,379
Total	<u>\$ 286,716</u>	<u>\$ 214,110</u>	<u>\$ 193,573</u>
Net premiums earned by underwriting location			
United States	\$ 155,929	\$ 113,062	\$ 92,236
Other	130,787	101,048	101,337
Total	<u>\$ 286,716</u>	<u>\$ 214,110</u>	<u>\$ 193,573</u>

Net premiums earned for 2016 was substantially higher than in 2015, primarily due to the growth of AMIC's business along with a higher earned contribution from the mortgage segment's quota share reinsurance business. Growth from 2014 to 2015 primarily reflects growth of AMIC.

Other Underwriting Income.

Other underwriting income, which is primarily related to GSE risk-sharing transactions receiving derivative accounting treatment, was \$17.0 million for 2016, compared to \$18.4 million for 2015 and \$4.8 million for 2014.

Losses and Loss Adjustment Expenses.

The table below shows the components of the mortgage segment's loss ratio:

	Year Ended December 31,		
	2016	2015	2014
Current year	17.5 %	24.5 %	29.3 %
Prior period reserve development	(7.4)%	(5.7)%	(0.5)%
Loss ratio	<u>10.1 %</u>	<u>18.8 %</u>	<u>28.8 %</u>

Unlike property and casualty business for which we estimate ultimate losses on premiums earned, losses on mortgage insurance business are only recorded at the time a borrower is delinquent on their mortgage, in accordance with primary mortgage insurance industry practice. Because our primary mortgage insurance reserving process does not take into account the impact of future losses from loans that are not in default, mortgage insurance loss reserves are not an estimate of ultimate losses. In addition to establishing loss reserves for loans in default, under GAAP, we are required to establish a premium deficiency reserve for our mortgage insurance products if the amount of expected future losses and

maintenance costs exceeds expected future premiums, existing reserves and the anticipated investment income for such product. We evaluate whether a premium deficiency exists quarterly. No such reserve was established during 2016.

Current Year Loss Ratio.

The mortgage segment's current year loss ratio was 7.0 points lower in 2016 compared to 2015 and 4.8 points lower in 2015 compared to 2014. The current year loss ratio for 2016 reflects changes in the mix of business earned, when compared to 2015, and the impact of a decrease in the number of delinquent loans and a lower claim rate on such loans. The lower current year loss ratio for 2015 compared to 2014 also reflected changes in the mix of business earned and a decrease in delinquent loans and claim rates.

Prior Period Reserve Development.

The mortgage segment's net favorable development was \$21.2 million, or 7.4 points, for 2016, compared to \$12.3 million, or 5.7 points, for 2015 and \$0.9 million, or 0.5 points, for 2014. The mortgage segment's net favorable development for 2016 included \$18.5 million of favorable development on AMIC business, reflecting a decrease in the number of delinquent loans and a lower claim rate on such loans. Such development was primarily from the 2004 to 2008 and 2014 origination years. The mortgage segment also experienced net favorable development of \$2.7 million on U.S. mortgage reinsurance business.

Underwriting Expenses.

2016 versus 2015: The underwriting expense ratio for the mortgage segment was 46.5% for 2016, compared to 59.6% for 2015. The acquisition expense ratio was 11.2% for 2016, compared to 21.1% for 2015. The operating expense ratio was 35.3% for 2016, compared to 38.5% for 2015. The decrease in the underwriting expense ratio reflects the expansion of the mortgage segment's insurance in force in 2016.

2015 versus 2014: The underwriting expense ratio for the mortgage segment was 59.6% for 2015, compared to 60.1% for 2014. The acquisition expense ratio was 21.1% for 2015, compared to 25.5% for 2014. The operating expense ratio was 38.5% for 2015, compared to 34.6% for 2014, reflecting efforts to expand the mortgage segment's underwriting platform in 2015.

Corporate (Non-Underwriting) Segment

The corporate (non-underwriting) segment results include net investment income, other income (loss), corporate expenses, interest expense, net realized gains or losses, net impairment losses included in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses, UGC transaction costs and

other, income taxes and items related to our non-cumulative preferred shares. Such amounts exclude the results of the 'other' segment.

Net Investment Income.

The components of net investment income were derived from the following sources:

	Year Ended December 31,		
	2016	2015	2014
Fixed maturities	\$ 242,310	\$ 241,389	\$ 257,387
Term loan investments	26,550	19,290	21,521
Equity securities	13,823	14,339	13,005
Short-term investments	3,619	574	904
Other (1)	39,750	41,721	28,803
Gross investment income	326,052	317,313	321,620
Investment expenses (2)	(48,859)	(45,633)	(37,284)
Net investment income	\$ 277,193	\$ 271,680	\$ 284,336

- (1) Amounts include dividends and income distributions on investment funds and other items.
- (2) Investment expenses were approximately 0.34% of average invested assets for 2016, compared to 0.35% for 2015 and 0.28% for 2014.

The pre-tax investment income yield was 1.92% for 2016, compared to 2.06% for 2015 and 2.08% for 2014. The comparability of net investment income between the periods was influenced by our share repurchase program, as well as the decrease in the pre-tax investment income yield, due in part to the prevailing interest rate environment. The pre-tax investment income yields were calculated based on amortized cost. Yields on future investment income may vary based on financial market conditions, investment allocation decisions and other factors.

Corporate Expenses.

Corporate expenses were \$49.4 million for 2016, compared to \$49.7 million for 2015 and \$47.6 million for 2014. Such amounts primarily represent certain holding company costs necessary to support our worldwide insurance and reinsurance operations and costs associated with operating as a publicly traded company.

Interest Expense.

Interest expense was \$53.5 million for 2016, compared to \$41.5 million for 2015 and \$45.6 million for 2014. Interest expense reflects amounts related to our outstanding senior notes, revolving credit agreement borrowings and other. The lower level of interest expense for 2015 primarily resulted from a reduction in interest expense in the 2015 second quarter on a deposit accounting liability contract. Such contract was commuted in the 2016 second quarter. We issued \$950.0 million

of senior notes in December 2016 in connection with the UGC acquisition and borrowed \$400.0 million on our revolving credit agreement. As such, our borrowing costs for 2017 will be higher than in 2016 and prior periods.

Net Realized Gains (Losses).

We recorded net realized gains of \$69.6 million for 2016, compared to net realized losses of \$99.1 million for 2015 and net realized gains of \$133.4 million for 2014. Currently, our portfolio is actively managed to maximize total return within certain guidelines. The effect of financial market movements on the investment portfolio will directly impact net realized gains and losses as the portfolio is adjusted and rebalanced. Net realized gains or losses from the sale of fixed maturities primarily results from our decisions to reduce credit exposure, to change duration targets, to rebalance our portfolios or due to relative value determinations. Net realized gains or losses also includes realized and unrealized contract gains and losses on our derivative instruments, changes in the fair value of assets and liabilities accounted for using the fair value option along with re-measurement of contingent consideration liability amounts.

Net Impairment Losses Recognized in Earnings.

For 2016, we recorded \$30.4 million of credit related impairments in earnings, compared to \$20.1 million in 2015 and \$30.2 million in 2014. The impairment losses recorded in 2016 included reductions on two asset backed securities based on information received from external investment managers and a review of cash flow projections in order to determine expected recovery values. In addition, impairment losses included reductions on certain corporate bonds, equities and other investments, with smaller contributions from other sectors. See note 9, "Investment Information—Other-Than-Temporary Impairments," of the notes accompanying our consolidated financial statements for additional information.

Equity in Net Income (Loss) of Investment Funds Accounted for Using the Equity Method.

We recorded \$48.5 million of equity in net income related to investment funds accounted for using the equity method for 2016, compared to \$25.5 million for 2015 and \$19.9 million for 2014. Investment funds accounted for using the equity method totaled \$811.3 million at December 31, 2016, compared to \$593.0 million at December 31, 2015.

Net Foreign Exchange Gains or Losses.

Net foreign exchange gains for 2016 were \$31.4 million, compared to net foreign exchange gains for 2015 of \$62.6 million and net foreign exchange gains for 2014 of \$82.7 million. Amounts in such periods were primarily unrealized and resulted from the effects of revaluing our net insurance

liabilities required to be settled in foreign currencies at each balance sheet date.

UGC Transaction Costs and Other.

UGC transaction costs and other were \$41.7 million for 2016. UGC transaction costs, which relate to non-recurring costs such as advisory, financing, legal, etc. related to the UGC acquisition discussed below, were \$32.3 million. In addition, we recorded an out-of-period charge of \$9.4 million in the 2016 fourth quarter related to a change in our accounting policy with respect to deferred acquisition costs. This change in accounting policy, which was reflected retroactively in our financial statements, also resulted in adjustments to the deferred acquisition costs, other assets, and retained earnings accounts on the balance sheet. See note 1, "General," of the notes accompanying our consolidated financial statements for additional information.

Income Tax Expense.

Our income tax provision on income before income taxes resulted in an expense of 4.3% for 2016, compared to an expense of 7.0% for 2015 and an expense of 2.7% for 2014. Our effective tax rate fluctuates from year to year consistent with the relative mix of income or loss reported by jurisdiction and the varying tax rates in each jurisdiction. See note 14, "Income Taxes," of the notes accompanying our consolidated financial statements for a reconciliation of the difference between the provision for income taxes and the expected tax provision at the weighted average statutory tax rate for 2016, 2015 and 2014.

Other Segment

The 'other' segment includes the results of Watford Re. Pursuant to generally accepted accounting principles, Watford Re is considered a variable interest entity and we concluded that we are the primary beneficiary of Watford Re. As such, we consolidate the results of Watford Re in our consolidated financial statements, although we only own approximately 11% of Watford Re's common equity. See note 4, "Variable Interest Entity and Noncontrolling Interests" and note 5, "Segment Information," of the notes accompanying our consolidated financial statements for additional information.

CRITICAL ACCOUNTING POLICIES, ESTIMATES AND RECENT ACCOUNTING PRONOUNCEMENTS

The preparation of consolidated financial statements in accordance with GAAP requires us to make many estimates and judgments that affect the reported amounts of assets, liabilities (including reserves), revenues and expenses, and related disclosures of contingent liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, insurance and other reserves, reinsurance

recoverables, allowance for doubtful accounts, investment valuations, intangible assets, bad debts, income taxes, contingencies and litigation. We base our estimates on historical experience, where possible, and on various other assumptions that we believe to be reasonable under the circumstances, which form the basis for our judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Estimates and judgments for a relatively new insurance and reinsurance company, like our company, are even more difficult to make than those made in a mature company since relatively limited historical information has been reported to us through December 31, 2016. Actual results will differ from these estimates and such differences may be material. We believe that the following critical accounting policies affect significant estimates used in the preparation of our consolidated financial statements.

Reserves for Losses and Loss Adjustment Expenses

We are required by applicable insurance laws and regulations and GAAP to establish reserves for losses and loss adjustment expenses (“Loss Reserves”) that arise from the business we underwrite. Loss Reserves for our insurance and reinsurance operations are balance sheet liabilities representing estimates of future amounts required to pay losses and loss adjustment expenses for insured or reinsured events which have occurred at or before the balance sheet date. Loss Reserves do not reflect contingency reserve allowances to account for future loss occurrences. Losses arising from future events will be estimated and recognized at the time the losses are incurred and could be substantial.

On December 31, 2016, the UGC acquisition was completed. As such, our mortgage segment Loss Reserves and disclosures in this section reflect the acquisition of UGC.

See note 7, “Short Duration Contracts,” of the notes accompanying our consolidated financial statements for additional information on our reserving process.

At December 31, 2016 and 2015, our Loss Reserves, net of unpaid losses and loss adjustment expenses recoverable, by type and by operating segment were as follows:

	December 31,	
	2016	2015
Insurance:		
Case reserves	\$ 1,414,603	\$ 1,434,986
IBNR reserves	3,187,451	3,080,122
Total net reserves	4,602,054	4,515,108
Reinsurance:		
Case reserves	762,730	699,860
Additional case reserves	92,524	99,343
IBNR reserves	1,517,983	1,593,186
Total net reserves	2,373,237	2,392,389
Mortgage:		
Case reserves	593,222	86,278
IBNR reserves	59,791	23,211
Total net reserves	653,013	109,489
Other:		
Case reserves	125,703	64,875
Additional case reserves	9,513	5,199
IBNR reserves	353,865	209,353
Total net reserves	489,081	279,427
Total:		
Case reserves	2,896,258	2,285,999
Additional case reserves	102,037	104,542
IBNR reserves	5,119,090	4,905,872
Total net reserves	<u>\$ 8,117,385</u>	<u>\$ 7,296,413</u>

At December 31, 2016 and 2015, the insurance segment’s Loss Reserves by major line of business, net of unpaid losses and loss adjustment expenses recoverable, were as follows:

	December 31,	
	2016	2015
Professional lines (1)	\$ 1,293,667	\$ 1,346,882
Construction and national accounts	976,109	876,278
Excess and surplus casualty (2)	687,305	682,286
Programs	667,677	687,405
Property, energy, marine and aviation	302,057	330,104
Travel, accident and health	72,726	64,537
Lenders products	42,147	44,273
Other (3)	560,366	483,343
Total net reserves	<u>\$ 4,602,054</u>	<u>\$ 4,515,108</u>

- (1) Includes professional liability, executive assurance and healthcare business.
- (2) Includes casualty and contract binding business.
- (3) Includes alternative markets, excess workers’ compensation and surety business.

At December 31, 2016 and 2015, the reinsurance segment's Loss Reserves by major line of business, net of unpaid losses and loss adjustment expenses recoverable, were as follows:

	December 31,	
	2016	2015
Casualty	\$ 1,355,362	\$ 1,386,084
Other specialty	428,205	420,865
Property excluding property catastrophe	297,200	301,757
Marine and aviation	147,700	137,969
Property catastrophe	86,026	94,991
Other	58,744	50,723
Total net reserves	\$ 2,373,237	\$ 2,392,389

Potential Variability in Loss Reserves

The tables below summarize the effect of reasonably likely scenarios on the key actuarial assumptions used to estimate our Loss Reserves, net of unpaid losses and loss adjustment expenses recoverable, at December 31, 2016 by underwriting segment (excluding the 'other' segment). The scenarios shown in the tables summarize the effect of (i) changes to the expected loss ratio selections used at December 31, 2016, which represent loss ratio point increases or decreases to the expected loss ratios used, and (ii) changes to the loss development patterns used in our reserving process at December 31, 2016, which represent claims reporting that is either slower or faster than the reporting patterns used. We believe that the illustrated sensitivities are indicative of the potential variability inherent in the estimation process of those parameters. The results show the impact of varying each key actuarial assumption using the chosen sensitivity on our IBNR reserves, on a net basis and across all accident years.

INSURANCE SEGMENT	Higher Expected Loss Ratios	Slower Loss Development Patterns
Reserving lines selected assumptions:		
Property, energy, marine and aviation	5 points	3 months
Third party occurrence business (1)	10	6
Third party claims-made business (2)	10	6
All other (3)	10	6
Increase (decrease) in Loss Reserves:		
Property, energy, marine and aviation	\$ 15,680	\$ 21,340
Third party occurrence business (1)	108,499	93,982
Third party claims-made business (2)	224,098	156,134
All other (3)	123,784	128,724

INSURANCE SEGMENT	Lower Expected Loss Ratios	Faster Loss Development Patterns
Reserving lines selected assumptions:		
Property, energy, marine and aviation	(5) points	(3) months
Third party occurrence business	(10)	(6)
Third party claims-made business	(10)	(6)
Multi-line and other specialty	(10)	(6)
Increase (decrease) in Loss Reserves:		
Property, energy, marine and aviation	\$ (15,680)	\$ (15,992)
Third party occurrence business	(108,499)	(76,809)
Third party claims-made business	(224,098)	(130,545)
Multi-line and other specialty	(123,784)	(102,506)

REINSURANCE SEGMENT	Higher Expected Loss Ratios	Slower Loss Development Patterns
Reserving lines selected assumptions:		
Casualty	10 points	6 months
Property catastrophe	5	3
Property excluding property catastrophe	5	3
Marine and aviation	5	3
Other specialty	5	3
Other	5	3
Increase (decrease) in Loss Reserves:		
Casualty	\$ 113,511	\$ 132,275
Property catastrophe	12,799	14,617
Property excluding property catastrophe	17,046	37,022
Marine and aviation	7,799	12,099
Other specialty	37,572	20,113
Other	3,937	2,179

REINSURANCE SEGMENT	Lower Expected Loss Ratios	Faster Loss Development Patterns
Reserving lines selected assumptions:		
Casualty	(10) points	(6) months
Property catastrophe	(5)	(3)
Property excluding property catastrophe	(5)	(3)
Marine and aviation	(5)	(3)
Other specialty	(5)	(3)
Other	(5)	(3)
Increase (decrease) in Loss Reserves:		
Casualty	\$ (113,511)	\$ (104,681)
Property catastrophe	(12,799)	(10,296)
Property excluding property catastrophe	(17,046)	(35,321)
Marine and aviation	(7,799)	(12,251)
Other specialty	(37,572)	(35,161)
Other	(3,937)	(2,031)

It is not necessarily appropriate to sum the total impact for a specific factor or the total impact for a specific business category as the business categories are not perfectly correlated. In addition, the potential variability shown in the tables above are reasonably likely scenarios of changes in our key assumptions at December 31, 2016 and are not meant to be a “best case” or “worst case” series of outcomes and, therefore, it is possible that future variations may be more or less than the amounts set forth above.

For our mortgage segment, we considered the sensitivity of loss reserve estimates at December 31, 2016 by assessing the potential changes resulting from a parallel shift in severity and default to claim rate. For example, assuming all other factors remain constant, for every one percentage point change in primary claim severity (which we estimate to be 32% of the unpaid principal balance at December 31, 2016), we estimated that our loss reserves would change by approximately \$20.0 million at December 31, 2016. For every one percentage point change in our primary net default to claim rate (which we estimate to be approximately 38% at December 31, 2016), we estimated a \$16.5 million change in our loss reserves at December 31, 2016.

Simulation Results

In order to illustrate the potential volatility in our Loss Reserves, we used a Monte Carlo simulation approach to simulate a range of results based on various probabilities. Both the probabilities and related modeling are subject to inherent uncertainties. The simulation relies on a significant number of assumptions, such as the potential for multiple entities to react similarly to external events, and includes other statistical assumptions. The simulation results shown for each segment do not add to the total simulation results, as the individual segment simulation results do not reflect the diversification effects across our segments.

At December 31, 2016, our recorded Loss Reserves by underwriting segment, net of unpaid losses and loss adjustment expenses recoverable, and the results of the simulation were as follows:

	Insurance	Reinsurance	Mortgage	Total
Loss Reserves (1)	\$4,602,054	\$2,373,237	\$653,013	\$7,628,304
Simulation results:				
90th percentile (2)	\$5,591,394	\$3,002,464	\$781,521	\$8,955,759
10th percentile (3)	\$3,702,815	\$1,834,192	\$533,222	\$6,416,379

- (1) Net of reinsurance recoverables. Excludes amounts reflected in the ‘other’ segment.
- (2) Simulation results indicate that a 90% probability exists that the net reserves for losses and loss adjustment expenses will not exceed the indicated amount.
- (3) Simulation results indicate that a 10% probability exists that the net reserves for losses and loss adjustment expenses will be at or below the indicated amount.

For informational purposes, based on the total simulation results, a change in our Loss Reserves to the amount indicated at the 90th percentile would result in a decrease in income before income taxes of approximately \$1.33 billion, or \$10.64 per diluted share, while a change in our Loss Reserves to the amount indicated at the 10th percentile would result in an increase in income before income taxes of approximately \$1.21 billion, or \$9.72 per diluted share. The simulation results noted above are informational only, and no assurance can be given that our ultimate losses will not be significantly different than the simulation results shown above, and such differences could directly and significantly impact earnings favorably or unfavorably in the period they are determined. We do not have significant exposure to pre-2002 liabilities, such as asbestos-related illnesses and other long-tail liabilities. It is difficult to provide meaningful trend information for certain liability/casualty coverages for which the claim-tail may be especially long, as claims are often reported and ultimately paid or settled years, or even decades, after the related loss events occur. Any estimates and assumptions made as part of the reserving process could prove to be inaccurate due to several factors, including the fact that relatively limited historical information has been reported to us through December 31, 2016.

Mortgage Operations Supplemental Information

Amounts in the following tables reflect the acquisition of UGC on December 31, 2016. The mortgage segment's insurance in force ("IIF") and risk in force ("RIF") were as follows for the last four quarters:

(U.S. Dollars in millions, except policy count)	December 31, 2016		September 30, 2016		June 30, 2016		March 31, 2016	
	Amount	%	Amount	%	Amount	%	Amount	%
Insurance In Force (IIF) (1):								
U.S. mortgage insurance	\$ 234,518	74	\$ 40,258	35	\$ 33,367	31	\$ 28,433	31
Mortgage reinsurance	24,315	8	22,071	19	22,242	21	22,393	24
Other (3)	56,776	18	53,826	46	52,926	49	41,172	45
Total	\$ 315,609	100	\$ 116,155	100	\$ 108,535	100	\$ 91,998	100
Risk In Force (RIF) (2):								
U.S. mortgage insurance	\$ 59,712	93	\$ 10,168	69	\$ 8,396	65	\$ 7,165	63
Mortgage reinsurance	2,489	4	2,557	17	2,567	20	2,661	23
Other (3)	2,242	4	2,104	14	1,993	15	1,636	14
Total	\$ 64,443	100	\$ 14,829	100	\$ 12,956	100	\$ 11,462	100
Ending number of policies in force	1,153,630		199,661		172,666		153,984	

- (1) The aggregate dollar amount of each insured mortgage loan's current principal balance.
- (2) The aggregate amount of each insured mortgage loan's current principal balance multiplied by the insurance coverage percentage specified in the policy for insurance policies issued and after contract limits and/or loss ratio caps for risk-sharing or reinsurance transactions.
- (3) Includes GSE credit risk-sharing transactions and international insurance business.

The following table provides supplemental disclosures for our U.S. mortgage insurance operations related to insured loans and loss metrics:

(U.S. Dollars in thousands, except loan and claim count)	Three Months Ended				Year Ended
	December 31, 2016	September 30, 2016	June 30, 2016	March 31, 2016	December 31, 2016
<u>Rollforward of insured loans in default:</u>					
Beginning delinquent number of loans	2,423	2,245	2,325	2,702	2,702
Plus: new notices	1,161	1,251	1,033	1,048	4,493
Less: cures	(1,026)	(925)	(919)	(1,206)	(4,076)
Less: paid claims	(153)	(151)	(193)	(222)	(719)
Less: delinquent rescissions and denials	(2)	3	(1)	3	3
Plus: acquired delinquent loans (1)	27,288	—	—	—	27,288
Ending delinquent number of loans	29,691	2,423	2,245	2,325	29,691
Ending percentage of loans in default	2.6%	1.2%	1.3%	1.5%	
<u>Losses:</u>					
Number of claims paid	153	151	193	222	719
Total paid claims	\$ 6,080	\$ 5,513	\$ 7,744	\$ 9,168	\$ 28,505
Average per claim	\$ 39.7	\$ 36.5	\$ 40.1	\$ 41.3	\$ 39.6
Severity (2)	92.3%	90.4%	94.8%	93.9%	93.1%
Average reserve per default	\$ 20.5	\$ 25.2	\$ 27.8	\$ 32.1	

- (1) Includes first lien primary and pool policies.
- (2) Represents total paid claims divided by RIF of loans for which claims were paid.

For each quarter end in 2016, the following table provides supplemental disclosures for our U.S. mortgage insurance operations' risk in force:

(U.S. Dollars in millions)	December 31, 2016		September 30, 2016		June 30, 2016		March 31, 2016	
	Amount	%	Amount	%	Amount	%	Amount	%
Total RIF by credit quality (FICO):								
>=740	\$ 34,867	58	\$ 5,817	57	\$ 4,766	57	\$ 3,995	56
680-739	18,976	32	3,425	34	2,779	33	2,354	33
620-679	5,050	9	834	8	753	9	712	10
<620	819	1	92	1	98	1	104	2
Total	\$ 59,712	100	\$ 10,168	100	\$ 8,396	100	\$ 7,165	100
Weighted average FICO score	743		742		741		739	
Total RIF by Loan-to-Value (LTV):								
95.01% and above	\$ 5,781	10	\$ 1,221	12	\$ 1,135	14	\$ 1,052	15
90.01% to 95.00%	32,986	55	5,430	53	4,379	52	3,677	51
85.01% to 90.00%	18,140	30	2,982	29	2,438	29	2,056	29
85.00% and below	2,805	5	535	5	444	5	380	5
Total	\$ 59,712	100	\$ 10,168	100	\$ 8,396	100	\$ 7,165	100
Weighted average LTV	92.9%		92.9%		92.9%		93.0%	
Total RIF by State:								
Texas	\$ 4,961	8	\$ 583	6	\$ 469	6	\$ 401	6
California	3,222	5	865	9	727	9	622	9
Virginia	2,586	4	377	4	300	4	237	3
Florida	2,367	4	544	5	422	5	345	5
Washington	2,331	4	302	3	279	3	261	4
Georgia	2,111	4	301	3	247	3	215	3
Illinois	2,090	4	348	3	279	3	218	3
Maryland	2,080	4	299	3	241	3	199	3
Minnesota	1,986	3	388	4	351	4	319	5
Ohio	1,916	3	312	3	260	3	212	3
Others	34,062	57	5,849	58	4,821	57	4,136	58
Total	\$ 59,712	100	\$ 10,168	100	\$ 8,396	100	\$ 7,165	100
Weighted average coverage (1)	25.5%		25.3%		25.2%		25.2%	
Analysts' persistency (2)	76.1%		75.4%		75.6%		74.2%	
Risk-to-capital ratio (3)	12.0:1		15.4:1		12.4:1		11.1:1	
U.S. mortgage insurance total RIF, net of reinsurance (4)	\$ 42,183		\$ 8,918		\$ 7,198		\$ 6,274	

(1) Represents the end of period RIF divided by end of period IIF.

(2) Represents the percentage of IIF at the beginning of a 12-month period that remained in force at the end of the period.

(3) Represents total current (non-delinquent) RIF, net of reinsurance, divided by total statutory capital. Ratio calculated for GSE eligible mortgage insurers (estimate for December 31, 2016 including UGC).

(4) Total RIF for the U.S. mortgage insurance operations after external reinsurance.

Ceded Reinsurance

In the normal course of business, our insurance and mortgage insurance operations cede a portion of their premium on a quota share or excess of loss basis through treaty or facultative reinsurance agreements. Our reinsurance operations also obtain reinsurance whereby another reinsurer contractually agrees to indemnify it for all or a portion of the reinsurance risks underwritten by our reinsurance operations. Such arrangements, where one reinsurer provides reinsurance to another reinsurer, are usually referred to as "retrocessional reinsurance" arrangements. In addition, our reinsurance subsidiaries participate in "common account" retrocessional arrangements for certain pro rata treaties. Such arrangements reduce the effect of individual or aggregate losses to all

companies participating on such treaties, including the reinsurers, such as our reinsurance operations, and the ceding company. Reinsurance recoverables are recorded as assets, predicated on the reinsurers' ability to meet their obligations under the reinsurance agreements. If the reinsurers are unable to satisfy their obligations under the agreements, our insurance or reinsurance operations would be liable for such defaulted amounts.

The availability and cost of reinsurance and retrocessional protection is subject to market conditions, which are beyond our control. Although we believe that our insurance and reinsurance operations have been successful in obtaining

adequate reinsurance and retrocessional protection, it is not certain that they will be able to continue to obtain adequate protection at cost effective levels. As a result of such market conditions and other factors, our insurance and reinsurance operations may not be able to successfully mitigate risk through reinsurance and retrocessional arrangements and may lead to increased volatility in our results of operations in future periods. See “Risk Factors—Risks Relating to Our Industry—The failure of any of the loss limitation methods we employ could have a material adverse effect on our financial condition or results of operations.”

Our insurance operations had in effect during 2016 a reinsurance program which provided coverage for certain property-catastrophe related losses equal to \$200 million in excess of a \$150 million retention per occurrence, consistent with the program in place for 2015. In the 2017 first quarter, our insurance operations renewed its reinsurance program with the same limits.

For purposes of managing risk, we reinsure a portion of our exposures, paying to reinsurers a part of the premiums received on the policies we write, and we may also use retrocessional protection. On a consolidated basis, ceded premiums written represented 22.5% of gross premiums written for 2016, compared to 20.4% for 2015 and 19.6% for 2014. We monitor the financial condition of our reinsurers and attempt to place coverages only with substantial, financially sound carriers. If the financial condition of our reinsurers or retrocessionaires deteriorates, resulting in an impairment of their ability to make payments, we will provide for probable losses resulting from our inability to collect amounts due from such parties, as appropriate. We evaluate the credit worthiness of all the reinsurers to which we cede business. If our analysis indicates that there is significant uncertainty regarding our ability to collect amounts due from reinsurers, managing general agents, brokers and other clients, we will record a provision for doubtful accounts. See “Risk Factors—Risks Relating to Our Company—We are exposed to credit risk in certain of our business operations” and “Financial Condition, Liquidity and Capital Resources—Financial Condition—Premiums Receivable and Reinsurance Recoverables” for further details.

Premium Revenues and Related Expenses

Insurance premiums written are generally recorded at the policy inception and are primarily earned on a pro rata basis over the terms of the policies for all products, usually 12 months. Premiums written include estimates in our insurance operations’ programs, specialty lines, collateral protection business and for participation in involuntary pools. The amount of such insurance premium estimates, included in premiums receivable and other assets, was \$67.1 million at December 31, 2016, compared to \$81.9 million at December 31, 2015. Such premium estimates are derived from multiple sources which include the historical experience of the underlying business,

similar business and available industry information. Unearned premium reserves represent the portion of premiums written that relates to the unexpired terms of in-force insurance policies.

Reinsurance premiums written include amounts reported by brokers and ceding companies, supplemented by our own estimates of premiums where reports have not been received. The determination of premium estimates requires a review of our experience with the ceding companies, familiarity with each market, the timing of the reported information, an analysis and understanding of the characteristics of each line of business, and management’s judgment of the impact of various factors, including premium or loss trends, on the volume of business written and ceded to us. On an ongoing basis, our underwriters review the amounts reported by these third parties for reasonableness based on their experience and knowledge of the subject class of business, taking into account our historical experience with the brokers or ceding companies. In addition, reinsurance contracts under which we assume business generally contain specific provisions which allow us to perform audits of the ceding company to ensure compliance with the terms and conditions of the contract, including accurate and timely reporting of information. Based on a review of all available information, management establishes premium estimates where reports have not been received. Premium estimates are updated when new information is received and differences between such estimates and actual amounts are recorded in the period in which estimates are changed or the actual amounts are determined. Premiums written are recorded based on the type of contracts we write. Premiums on our excess of loss and pro rata reinsurance contracts are estimated when the business is underwritten. For excess of loss contracts, premiums are recorded as written based on the terms of the contract. Estimates of premiums written under pro rata contracts are recorded in the period in which the underlying risks incept and are based on information provided by the brokers and the ceding companies. For multi-year reinsurance treaties which are payable in annual installments, generally, only the initial annual installment is included as premiums written at policy inception due to the ability of the reinsured to commute or cancel coverage during the term of the policy. The remaining annual installments are included as premiums written at each successive anniversary date within the multi-year term.

Reinstatement premiums for our insurance and reinsurance operations are recognized at the time a loss event occurs, where coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms. Reinstatement premiums, if obligatory, are fully earned when recognized. The accrual of reinstatement premiums is based on an estimate of losses and loss adjustment expenses, which reflects management’s judgment, as described above in “—Reserves for Losses and Loss Adjustment Expenses.”

The amount of reinsurance premium estimates included in premiums receivable and the amount of related acquisition expenses by type of business were as follows at December 31, 2016:

	December 31, 2016		
	Gross Amount	Acquisition Expenses	Net Amount
Casualty	\$ 205,016	\$ (64,563)	\$ 140,453
Other specialty	141,943	(39,392)	102,551
Property excluding property catastrophe	64,483	(21,544)	42,939
Marine and aviation	30,560	(8,669)	21,891
Property catastrophe	1,158	(66)	1,092
Other	55,569	(12,657)	42,912
Total	<u>\$ 498,729</u>	<u>\$ (146,891)</u>	<u>\$ 351,838</u>

Premium estimates are reviewed by management at least quarterly. Such review includes a comparison of actual reported premiums to expected ultimate premiums along with a review of the aging and collection of premium estimates. Based on management's review, the appropriateness of the premium estimates is evaluated, and any adjustment to these estimates is recorded in the period in which it becomes known. Adjustments to premium estimates could be material and such adjustments could directly and significantly impact earnings favorably or unfavorably in the period they are determined because the estimated premium may be fully or substantially earned.

A significant portion of amounts included as premiums receivable, which represent estimated premiums written, net of commissions, are not currently due based on the terms of the underlying contracts. Based on currently available information, management believes that the premium estimates included in premiums receivable will be collectible and, therefore, no provision for doubtful accounts has been recorded on the premium estimates at December 31, 2016.

Reinsurance premiums assumed, irrespective of the class of business, are generally earned on a pro rata basis over the terms of the underlying policies or reinsurance contracts. Contracts and policies written on a "losses occurring" basis cover claims that may occur during the term of the contract or policy, which is typically 12 months. Accordingly, the premium is earned evenly over the term. Contracts which are written on a "risks attaching" basis cover claims which attach to the underlying insurance policies written during the terms of such contracts. Premiums earned on such contracts usually extend beyond the original term of the reinsurance contract, typically resulting in recognition of premiums earned over a 24-month period.

Certain of our reinsurance contracts include provisions that adjust premiums or acquisition expenses based upon the experience under the contracts. Premiums written and earned,

as well as related acquisition expenses, are recorded based upon the projected experience under such contracts.

Retroactive reinsurance reimburses a ceding company for liabilities incurred as a result of past insurable events covered by the underlying policies reinsured. In certain instances, reinsurance contracts cover losses both on a prospective basis and on a retroactive basis and, accordingly, we bifurcate the prospective and retrospective elements of these reinsurance contracts and account for each element separately. Underwriting income generated in connection with retroactive reinsurance contracts is deferred and amortized into income over the settlement period while losses are charged to income immediately. Subsequent changes in estimated or actual cash flows under such retroactive reinsurance contracts are accounted for by adjusting the previously deferred amount to the balance that would have existed had the revised estimate been available at the inception of the reinsurance transaction, with a corresponding charge or credit to income.

Mortgage guaranty insurance policies are contracts that are generally non-cancelable by the insurer, are renewable at a fixed price, and provide for payment of premiums on a monthly, annual or single basis. Upon renewal, we are not able to re-underwrite or re-price our policies. Consistent with industry accounting practices, premiums written on a monthly basis are earned as coverage is provided. Premiums written on an annual basis are amortized on a monthly pro rata basis over the year of coverage. Primary mortgage insurance premiums written on policies covering more than one year are referred to as single premiums. A portion of the revenue from single premiums is recognized in premiums earned in the current period, and the remaining portion is deferred as unearned premiums and earned over the estimated expiration of risk of the policy. If single premium policies related to insured loans are canceled due to repayment by the borrower and the policy is a non-refundable product, the remaining unearned premium related to each canceled policy is recognized as earned premium upon notification of the cancellation.

Unearned premiums represent the portion of premiums written that is applicable to the estimated unexpired risk of insured loans. A portion of premium payments may be refundable if the insured cancels coverage, which generally occurs when the loan is repaid, the loan amortizes to a sufficiently low amount to trigger a lender permitted or legally required cancellation, or the value of the property has increased sufficiently in accordance with the terms of the contract. Premium refunds reduce premiums earned in the consolidated statements of income. Generally, only unearned premiums are refundable. However, when we pay a claim on a delinquent loan, all servicer paid premiums received on the delinquent loan covering any period after the default date will be refunded, in accordance with the terms of the contract.

Acquisition costs that are directly related and incremental to the successful acquisition or renewal of business are deferred and amortized based on the type of contract. For property and casualty insurance and reinsurance contracts, deferred acquisition costs are amortized over the period in which the related premiums are earned. Consistent with mortgage insurance industry accounting practice, amortization of acquisition costs related to the mortgage insurance contracts for each underwriting year's book of business is recorded in proportion to estimated gross profits. Estimated gross profits are comprised of earned premiums and losses and loss adjustment expenses. For each underwriting year, we estimate the rate of amortization to reflect actual experience and any changes to persistency or loss development.

Acquisition expenses and other expenses related to our underwriting operations that vary with, and are directly related to, the successful acquisition or renewal of business are deferred and amortized based on the type of contract. Our insurance and reinsurance operations capitalize incremental direct external costs that result from acquiring a contract but do not capitalize salaries, benefits and other internal underwriting costs. For our mortgage insurance operations, which include a substantial direct sales force, both external and certain internal direct costs are deferred and amortized. Deferred acquisition costs are carried at their estimated realizable value and take into account anticipated losses and loss adjustment expenses, based on historical and current experience, and anticipated investment income.

A premium deficiency occurs if the sum of anticipated losses and loss adjustment expenses, unamortized acquisition costs and maintenance costs and anticipated investment income exceed unearned premiums. A premium deficiency reserve ("PDR") is recorded by charging any unamortized acquisition costs to expense to the extent required in order to eliminate the deficiency. If the premium deficiency exceeds unamortized acquisition costs then a liability is accrued for the excess deficiency.

To assess the need for a PDR on our mortgage exposures, we develop loss projections based on modeled loan defaults related to our current policies in force. This projection is based on recent trends in default experience, severity and rates of defaulted loans moving to claim, as well as recent trends in the rate at which loans are prepaid. Evaluating the expected profitability of our existing mortgage insurance business and the need for a PDR for our mortgage business involves significant reliance upon assumptions and estimates with regard to the likelihood, magnitude and timing of potential losses and premium revenues. The models, assumptions and estimates we use to evaluate the need for a PDR may prove to be inaccurate, especially during an extended economic downturn or a period of extreme market volatility and uncertainty.

No premium deficiency charges were recorded by us during 2016, 2015 and 2014.

Fair Value Measurements

Accounting guidance regarding fair value measurements addresses how companies should measure fair value when they are required to use a fair value measure for recognition or disclosure purposes under GAAP and provides a common definition of fair value to be used throughout GAAP. It defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly fashion between market participants at the measurement date. In addition, it establishes a three-level valuation hierarchy for the disclosure of fair value measurements. The valuation hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The level in the hierarchy within which a given fair value measurement falls is determined based on the lowest level input that is significant to the measurement (Level 1 being the highest priority and Level 3 being the lowest priority).

We determine the existence of an active market based on our judgment as to whether transactions for the financial instrument occur in such market with sufficient frequency and volume to provide reliable pricing information. The independent pricing sources obtain market quotations and actual transaction prices for securities that have quoted prices in active markets. We use quoted values and other data provided by nationally recognized independent pricing sources as inputs into our process for determining fair values of our fixed maturity investments. To validate the techniques or models used by pricing sources, our review process includes, but is not limited to: quantitative analysis (e.g., comparing the quarterly return for each managed portfolio to their target benchmark, with significant differences identified and investigated); a review of the average number of prices obtained in the pricing process and the range of resulting fair values; initial and ongoing evaluation of methodologies used by outside parties to calculate fair value; comparing the fair value estimates to our knowledge of the current market; a comparison of the pricing services' fair values to other pricing services' fair values for the same investments; and back-testing, which includes randomly selecting purchased or sold securities and comparing the executed prices to the fair value estimates from the pricing service. Where multiple quotes or prices were obtained, a price source hierarchy was maintained in order to determine which price source would be used (*i.e.*, a price obtained from a pricing service with more seniority in the hierarchy will be used from a less senior one in all cases). The hierarchy prioritizes pricing services based on availability and reliability and assigns the highest priority to index providers. Based on the above review, we will challenge any prices for a security or portfolio which are considered not to be representative of fair value.

The independent pricing sources obtain market quotations and actual transaction prices for securities that have quoted prices in active markets. Each source has its own proprietary method for determining the fair value of securities that are not actively traded. In general, these methods involve the use of “matrix pricing” in which the independent pricing source uses observable market inputs including, but not limited to, investment yields, credit risks and spreads, benchmarking of like securities, broker-dealer quotes, reported trades and sector groupings to determine a reasonable fair value. In addition, pricing vendors use model processes, such as an Option Adjusted Spread model, to develop prepayment and interest rate scenarios. The Option Adjusted Spread model is commonly used to estimate fair value for securities such as mortgage backed and asset backed securities. In certain circumstances, when fair values are unavailable from these independent pricing sources, quotes are obtained directly from broker-dealers who are active in the corresponding markets. Such quotes are subject to the validation procedures noted above.

We review our securities measured at fair value and discuss the proper classification of such investments with investment advisors and others. See note 10, “Fair Value,” of the notes accompanying our consolidated financial statements for a summary of our financial assets and liabilities measured at fair value at December 31, 2016 by valuation hierarchy.

Other-Than-Temporary Impairments

On a quarterly basis, we perform reviews of our investments to determine whether declines in fair value below the cost basis are considered other-than-temporary in accordance with applicable accounting guidance regarding the recognition and presentation of OTTI. The process of determining whether a security is other-than-temporarily impaired requires judgment and involves analyzing many factors. These factors include: an analysis of the liquidity, business prospects and overall financial condition of the issuer; the time period in which there was a significant decline in value; the significance of the decline; and the analysis of specific credit events.

We evaluate the unrealized losses of our equity securities by issuer and determine if we can forecast a reasonable period of time by which the fair value of the securities would increase and we would recover our cost. If we are unable to forecast a reasonable period of time in which to recover the cost of our equity securities, we record an OTTI equivalent to the entire unrealized loss. For debt securities, we separate an OTTI into two components when there are credit related losses associated with the impaired debt security for which we assert that we do not have the intent to sell the security, and it is more likely than not that we will not be required to sell the security before recovery of its cost basis. The amount of the OTTI related to a credit loss is recognized in earnings, and the amount of the OTTI related to other factors (*e.g.*, interest rates, market conditions, etc.) is recorded as a component of other comprehensive income

or loss. The amount of the credit loss of an impaired debt security is the difference between the amortized cost and the greater of (i) the present value of expected future cash flows and (ii) the fair value of the security. In instances where no credit loss exists but it is more likely than not that we will have to sell the debt security prior to the anticipated recovery, the decline in fair value below amortized cost is recognized as an OTTI in earnings. In periods after the recognition of an OTTI on debt securities, we account for such securities as if they had been purchased on the measurement date of the OTTI at an amortized cost basis equal to the previous amortized cost basis less the OTTI recognized in earnings. For debt securities for which OTTI were recognized in earnings, the difference between the new amortized cost basis and the cash flows expected to be collected will be accreted or amortized into net investment income.

For 2016, we recorded \$30.4 million of credit related impairments in earnings, compared to \$20.1 million in 2015 and \$30.2 million in 2014. See note 9, “Investment Information—Other-Than-Temporary Impairments,” of the notes accompanying our consolidated financial statements for additional information.

Reclassifications

We have reclassified the presentation of certain prior year information to conform to the current presentation. Such reclassifications had no effect on our net income, shareholders’ equity or cash flows.

Recent Accounting Pronouncements

See note 3(q), “Significant Accounting Policies—Recent Accounting Pronouncements,” of the notes accompanying our consolidated financial statements.

FINANCIAL CONDITION, LIQUIDITY AND CAPITAL RESOURCES

Financial Condition

Investable Assets

- ***Investable Assets Held by Arch***

The finance, investment and risk management (“FI&R”) committee of our board of directors establishes our investment policies and sets the parameters for creating guidelines for our investment managers. The FI&R committee reviews the implementation of the investment strategy on a regular basis. Our current approach stresses preservation of capital, market liquidity and diversification of risk. While maintaining our emphasis on preservation of capital and liquidity, we expect our portfolio to become more diversified and, as a result, we may expand into areas which are not currently part of our investment

strategy. Our Chief Investment Officer administers the investment portfolio, oversees our investment managers and formulates investment strategy in conjunction with the FI&R committee.

On December 31, 2016, the UGC acquisition was completed. As such, our balance sheet reflects the acquisition of UGC while our results of operations for 2016 do not include UGC activity other than the impact of capital raising activity and transaction costs.

The following table summarizes the fair value of the investable assets held by Arch (*i.e.*, excluding amounts in the ‘other’ segment):

Investable assets (1):	Estimated Fair Value	% of Total
December 31, 2016		
Fixed maturities (2)	\$ 14,521,774	77.9
Short-term investments (2)	676,547	3.6
Cash	768,049	4.1
Equity securities (2)	558,008	3.0
Other investments (2)	1,276,841	6.9
Investments accounted for using the equity method	811,273	4.4
Securities transactions entered into but not settled at the balance sheet date	23,697	0.1
Total investable assets held by Arch	\$ 18,636,189	100.0
December 31, 2015		
Fixed maturities (2)	\$ 11,200,437	76.5
Short-term investments (2)	587,904	4.0
Cash	444,776	3.0
Equity securities (2)	629,980	4.3
Other investments (2)	1,209,285	8.3
Investments accounted for using the equity method	592,973	4.0
Securities transactions entered into but not settled at the balance sheet date	(20,524)	(0.1)
Total investable assets held by Arch	\$ 14,644,831	100.0

- (1) In securities lending transactions, we receive collateral in excess of the fair value of the securities pledged. For purposes of this table, we have excluded the collateral received under securities lending, at fair value and included the securities pledged under securities lending, at fair value.
- (2) Includes investments carried as available for sale, at fair value and at fair value under the fair value option.

At December 31, 2016, our fixed income portfolio, which includes fixed maturity securities and short-term investments, had average credit quality ratings from Standard & Poor’s Rating Services (“S&P”)/Moody’s of “AA-/Aa3” and an average yield to maturity (embedded book yield), before investment expenses, of 2.03%. At December 31, 2015, our fixed income portfolio had average credit quality ratings from S&P/Moody’s of “AA/Aa2” and an average yield to maturity of 2.16%. Our investment portfolio had an average effective duration of 3.64 years at December 31, 2016, compared to 3.43 years at December 31, 2015. At December 31, 2016,

approximately \$13.90 billion, or 75%, of total investable assets held by Arch were internally managed, compared to \$10.01 billion, or 68%, at December 31, 2015.

The following table summarizes our fixed maturities and fixed maturities pledged under securities lending agreements (“Fixed Maturities”) by type:

	Estimated Fair Value	% of Total
December 31, 2016		
Corporate bonds	\$ 4,696,079	32.3
Mortgage backed securities	504,677	3.5
Municipal bonds	3,713,434	25.6
Commercial mortgage backed securities	536,051	3.7
U.S. government and government agencies	2,804,811	19.3
Non-U.S. government securities	1,142,735	7.9
Asset backed securities	1,123,987	7.7
Total	\$ 14,521,774	100.0
December 31, 2015		
Corporate bonds	\$ 2,960,694	26.4
Mortgage backed securities	812,557	7.3
Municipal bonds	1,626,281	14.5
Commercial mortgage backed securities	764,152	6.8
U.S. government and government agencies	2,423,455	21.6
Non-U.S. government securities	992,792	8.9
Asset backed securities	1,620,506	14.5
Total	\$ 11,200,437	100.0

At December 31, 2016, below-investment grade securities comprised approximately 5% of our Fixed Maturities, compared to 5% at December 31, 2015. In accordance with our investment strategy, we invest in high yield fixed income securities which are included in “Corporate bonds.” Upon issuance, these securities are typically rated below investment grade (*i.e.*, rating assigned by the major rating agencies of “BB +” or less). At December 31, 2016, corporate bonds represented 51% of the total below investment grade securities at fair value, mortgage backed securities represented 5% of the total and 44% were in other classes. At December 31, 2015, corporate bonds represented 70% of the total below investment grade securities at fair value, mortgage backed securities represented 13% of the total and 17% were in other classes. Unrealized losses include the impact of foreign exchange movements on certain securities denominated in foreign currencies and, as such, the amount of securities in an unrealized loss position fluctuates due to foreign currency movements.

The following table provides the credit quality distribution of our Fixed Maturities. For individual fixed maturities, S&P ratings are used. In the absence of an S&P rating, ratings from Moody's are used, followed by ratings from Fitch Ratings.

	Estimated Fair Value	% of Total
December 31, 2016		
U.S. government and gov't agencies (1)	\$ 3,210,899	22.1
AAA	3,918,739	27.0
AA	3,148,226	21.7
A	2,338,834	16.1
BBB	1,203,942	8.3
BB	226,321	1.6
B	156,405	1.1
Lower than B	90,833	0.6
Not rated	227,574	1.6
Total	<u>\$ 14,521,774</u>	<u>100.0</u>
December 31, 2015		
U.S. government and gov't agencies (1)	\$ 3,060,869	27.3
AAA	4,000,750	35.7
AA	1,651,760	14.7
A	1,431,138	12.8
BBB	457,251	4.1
BB	203,426	1.8
B	138,770	1.2
Lower than B	130,545	1.2
Not rated	125,928	1.1
Total	<u>\$ 11,200,437</u>	<u>100.0</u>

(1) Includes U.S. government-sponsored agency mortgage backed securities and agency commercial mortgage backed securities.

The following table provides information on the severity of the unrealized loss position as a percentage of amortized cost for all Fixed Maturities which were in an unrealized loss position:

Severity of gross unrealized losses:	Estimated Fair Value	Gross Unrealized Losses	% of Total Gross Unrealized Losses
December 31, 2016			
0-10%	\$ 7,078,582	\$ (127,909)	71.6
10-20%	155,403	(24,219)	13.5
20-30%	89,887	(25,929)	14.5
Greater than 30%	1,496	(702)	0.4
Total	<u>\$ 7,325,368</u>	<u>\$ (178,759)</u>	<u>100.0</u>
December 31, 2015			
0-10%	\$ 6,956,754	\$ (74,229)	54.4
10-20%	173,441	(28,789)	21.1
20-30%	86,997	(26,227)	19.2
Greater than 30%	10,638	(7,160)	5.2
Total	<u>\$ 7,227,830</u>	<u>\$ (136,405)</u>	<u>100.0</u>

The following table provides information on the severity of the unrealized loss position as a percentage of amortized cost for non-investment grade Fixed Maturities which were in an unrealized loss position:

Severity of gross unrealized losses:	Estimated Fair Value	Gross Unrealized Losses	% of Total Gross Unrealized Losses
December 31, 2016			
0-10%	\$ 155,258	\$ (3,978)	2.2
10-20%	7,727	(1,235)	0.7
20-30%	2,313	(727)	0.4
Greater than 30%	1,496	(701)	0.4
Total	<u>\$ 166,794</u>	<u>\$ (6,641)</u>	<u>3.7</u>
December 31, 2015			
0-10%	\$ 176,343	\$ (5,139)	3.8
10-20%	28,707	(4,807)	3.5
20-30%	12,500	(4,410)	3.2
Greater than 30%	10,520	(7,107)	5.2
Total	<u>\$ 228,070</u>	<u>\$ (21,463)</u>	<u>15.7</u>

We determine estimated recovery values for our Fixed Maturities following a review of the business prospects, credit ratings, estimated loss given default factors and information received from asset managers and rating agencies for each security. For structured securities, we utilize underlying data, where available, for each security provided by asset managers and additional information from credit agencies in order to determine an expected recovery value for each security. The analysis provided by the asset managers includes expected cash flow projections under base case and stress case scenarios which modify expected default expectations and loss severities and slow down prepayment assumptions.

The following table summarizes our top ten exposures to fixed income corporate issuers by fair value at December 31, 2016, excluding guaranteed amounts and covered bonds:

	Estimated Fair Value	Credit Rating (1)
Microsoft Corporation	\$ 89,820	AAA/Aaa
Apple Inc.	72,861	AAA/Aaa
Bank of New York Mellon Corp.	67,360	AA+/Aa1
Oracle Corporation	66,058	A/A1
JPMorgan Chase & Co	64,470	AA-/A1
Royal Dutch Shell PLC	58,019	A-/A3
Daimler AG	53,042	A/Aa2
Bank of America Corporation	51,193	A/A3
MetLife, Inc.	49,576	BBB+/Baa1
Massmutual Global Funding II Corp	47,767	AA-/Aa3
Total	<u>\$ 620,166</u>	

(1) Average credit ratings as assigned by S&P and Moody's, respectively.

Our portfolio includes investments, such as mortgage-backed securities, which are subject to prepayment risk. At December 31, 2016, our investments in residential mortgage-

backed securities (“RMBS”) amounted to approximately \$504.7 million, or 2.7% of total investable assets held by Arch, compared to \$812.6 million, or 5.5%, at December 31, 2015. As with other fixed income investments, the fair value of these securities fluctuates depending on market and other general economic conditions and the interest rate environment. Declines or flattening in residential property values may result in additional increases in delinquencies and losses on residential mortgage loans generally, especially with respect to any residential mortgage loans where the aggregate loan amounts (including any subordinate loans) are close to or greater than the related property values. Such developments may have a significant adverse effect on the prices of loans and securities, including those in our investment portfolio.

Changes in interest rates can expose us to changes in the prepayment rate on these investments. In periods of declining interest rates, mortgage prepayments generally increase and RMBS are prepaid more quickly, requiring us to reinvest the proceeds at the then current market rates. Conversely, in periods of rising rates, mortgage prepayments generally fall, preventing us from taking full advantage of the higher level of rates. However, economic conditions may curtail prepayment activity if refinancing becomes more difficult, thus limiting prepayments on RMBS.

Our portfolio also includes commercial mortgage backed securities (“CMBS”). At December 31, 2016, CMBS constituted approximately \$536.1 million, or 2.9% of total investable assets held by Arch, compared to \$764.2 million, or 5.2%, at December 31, 2015. The commercial real estate market may experience price deterioration, which could lead to delinquencies and losses on commercial real estate mortgages.

The following table provides information on our non-agency RMBS and non-agency CMBS at December 31, 2016 by issuance year, excluding amounts guaranteed by U.S. government agencies. Non-agency RMBS and non-agency CMBS were 0.6% and 2.8% of total investable assets held by Arch, respectively.

Issuance Year	Amortized Cost	Average Credit Quality	Estimated Fair Value
2004-2008	\$ 43,603	C+	\$ 47,426
2011	276	AA+	273
2012	142	AAA	145
2013	85	AAA	75
2014	3,367	B-	3,368
2015	1,959	BBB-	1,944
2016	59,562	AA+	58,258
Total RMBS	\$ 108,994	BB+	\$ 111,489

2002-2008	33,973	AA	33,295
2009	380	BBB-	379
2010	374	B+	367
2012	25,795	AAA	25,831
2013	84,090	AAA	85,709
2014	159,369	AA+	160,202
2015	122,142	AAA	120,377
2016	100,666	AA+	96,991
Total CMBS	\$ 526,789	AA+	\$ 523,151

Additional Statistics:	Non-Agency RMBS	Non-Agency CMBS (1)
Weighted average loan age (months)	71	29
Weighted average life (months) (2)	90	80
Weighted average loan-to-value % (3)	60.6%	56.3%
Total delinquencies (4)	6.9%	0.3%
Current credit support % (5)	14.6%	33.5%

- (1) Loans defeased with government/agency obligations were not material to the collateral underlying our CMBS holdings.
- (2) The weighted average life for RMBS is based on the interest rates in effect at December 31, 2016. The weighted average life for CMBS reflects the average life of the collateral underlying our CMBS holdings.
- (3) The range of loan-to-values is 16% to 93% on RMBS and 0% to 412% on CMBS.
- (4) Total delinquencies includes 60 days and over.
- (5) Current credit support percentage represents the percentage for a collateralized mortgage obligation (“CMO”) or CMBS class/tranche from other subordinate classes in the same CMO or CMBS deal.

The following table provides information on our asset backed securities (“ABS”) at December 31, 2016. ABS were 6.0% of total investable assets held by Arch, respectively.

Sector	Amortized Cost	Weighted Average		Estimated Fair Value
		Credit Quality	Credit Support	
Credit cards	\$ 613,355	AAA	17%	\$ 611,492
Autos	262,514	AAA	30%	262,181
Loans	83,467	BBB	22%	83,464
Equipment	103,985	AA	5%	104,520
Other (1)	60,295	BB	16%	62,330
Total ABS (2)	<u>\$ 1,123,616</u>	AA+		<u>\$ 1,123,987</u>

- (1) Including rate reduction bonds, commodities, home equity, U.K. securitized and other.
- (2) The effective duration of the total ABS was 1.5 years at December 31, 2016.

At December 31, 2016, our fixed income portfolio included \$25.3 million par value in sub-prime securities with a fair value of \$23.3 million and average credit quality ratings from S&P/Moody's of "CCC/Caa3." At December 31, 2015, our fixed income portfolio included \$45.5 million par value in sub-prime securities with a fair value of \$35.9 million and average credit quality ratings from S&P/Moody's of "CCC/Caa3." Such amounts were primarily in the home equity sector of our ABS, with the balance in other ABS, RMBS and CMBS sectors. We define sub-prime mortgage-backed securities as investments in which the underlying loans primarily exhibit one or more of the following characteristics: low FICO scores, above-prime interest rates, high loan-to-value ratios or high debt-to-income ratios.

The following table provides information on the fair value of our Eurozone investments at December 31, 2016:

Country (1)	Sovereign (2)	Corporate Bonds	Other (3)	Total
Netherlands	\$ 90,951	\$ 137,414	\$ 3,712	\$ 232,077
Germany	74,772	41,520	7,458	123,750
France	302	55,972	11,136	67,410
Luxembourg	—	23,386	2,522	25,908
Belgium	13,878	7,638	1	21,517
Ireland	—	1,818	5,905	7,723
Supranational (4)	7,454	—	—	7,454
Italy	—	—	4,403	4,403
Spain	—	—	3,720	3,720
Finland	—	—	3,576	3,576
Greece	81	711	—	792
Total	<u>\$ 187,438</u>	<u>\$ 268,459</u>	<u>\$ 42,433</u>	<u>\$ 498,330</u>

- (1) The country allocations set forth in the table are based on various assumptions made by us in assessing the country in which the underlying credit risk resides, including a review of the jurisdiction of organization, business operations and other factors. Based on such analysis, we do not believe that we have any other Eurozone investments at December 31, 2016.
- (2) Includes securities issued and/or guaranteed by Eurozone governments.
- (3) Includes bank loans, equities and other.
- (4) Includes World Bank, European Investment Bank, International Finance Corp. and European Bank for Reconstruction and Development.

At December 31, 2016, our equity portfolio included \$558.0 million of equity securities, compared to \$630.0 million at

December 31, 2015. Our equity portfolio includes publicly traded common stocks in the natural resources, energy, consumer staples and other sectors.

The following table provides information on the severity of the unrealized loss position as a percentage of cost for all equity securities classified as available for sale which were in an unrealized loss position:

Severity of gross unrealized losses:	Estimated Fair Value	Gross Unrealized Losses	% of Total Gross Unrealized Losses
December 31, 2016			
0-10%	\$ 214,364	\$ (8,776)	50.1
10-20%	52,034	(7,100)	40.5
20-30%	1,983	(607)	3.5
Greater than 30%	1,000	(1,034)	5.9
Total	<u>\$ 269,381</u>	<u>\$ (17,517)</u>	<u>100.0</u>
December 31, 2015			
0-10%	\$ 176,451	\$ (5,926)	33.3
10-20%	39,728	(6,528)	36.7
20-30%	13,700	(4,164)	23.4
Greater than 30%	2,396	(1,178)	6.6
Total	<u>\$ 232,275</u>	<u>\$ (17,796)</u>	<u>100.0</u>

On a quarterly basis, we evaluate the unrealized losses of our equity securities by issuer and forecast a reasonable period of time by which the fair value of the securities would increase and we would recover the cost basis. All of the unrealized losses on equity securities were on holdings which have been in a continual unrealized loss position for less than 12 months at December 31, 2016. We believe that a reasonable period of time exists to allow for recovery of the cost basis of our equity securities that are in an unrealized loss position at December 31, 2016.

The following table summarizes our other investments:

	December 31, 2016	December 31, 2015
Available for sale:		
Asian and emerging markets	\$ 84,778	\$ 206,861
Investment grade fixed income	33,923	31,370
Credit related funds	7,469	22,512
Other	41,800	39,733
Total available for sale	167,970	300,476
Fair value option:		
Term loan investments (par value: \$385,436 and \$356,096)	378,877	345,855
Mezzanine debt funds	127,943	121,589
Credit related funds	218,298	219,049
Investment grade fixed income	75,468	63,053
Asian and emerging markets	178,568	34,761
Other (1)	129,717	124,502
Total fair value option	1,108,871	908,809
Total	\$ 1,276,841	\$ 1,209,285

- (1) Includes fund investments with strategies in mortgage servicing rights, transportation and infrastructure assets and other.

Certain of our other investments are in investment funds for which we have the option to redeem at agreed upon values as described in each investment fund's subscription agreement. Depending on the terms of the various subscription agreements, investments in investment funds may be redeemed daily, monthly, quarterly or on other terms. Two common redemption restrictions which may impact our ability to redeem these investment funds are gates and lockups. A gate is a suspension of redemptions which may be implemented by the general partner or investment manager of the fund in order to defer, in whole or in part, the redemption request in the event the aggregate amount of redemption requests exceeds a predetermined percentage of the investment fund's net assets which may otherwise hinder the general partner or investment manager's ability to liquidate holdings in an orderly fashion in order to generate the cash necessary to fund extraordinarily large redemption payouts. A lockup period is the initial amount of time an investor is contractually required to hold the security before having the ability to redeem. If our investment is eligible to be redeemed, the time to redeem such investment can take weeks or months following the notification.

Certain of our investment managers may use leverage to achieve a higher rate of return on their assets under management, primarily those included in "other investments available for sale, at fair value," "investments accounted for using the fair value option" and "investments accounted for using the equity method" on our balance sheet. While leverage presents opportunities for increasing the total return of such investments, it may increase losses as well. Accordingly, any event that adversely affects the value of the underlying holdings would be magnified to the extent leverage is used and our potential losses would be magnified. In addition, the structures used to

generate leverage may lead to such investments being required to meet covenants based on market valuations and asset coverage. Market valuation declines could force the sale of investments into a depressed market, which may result in significant additional losses. Alternatively, the levered investments may attempt to delever by raising additional equity or potentially changing the terms of the established financing arrangements. We may choose to participate in the additional funding of such investments.

Our investment strategy allows for the use of derivative instruments. We utilize various derivative instruments such as futures contracts to enhance investment performance, replicate investment positions or manage market exposures and duration risk that would be allowed under our investment guidelines if implemented in other ways. See note 11, "Derivative Instruments," of the notes accompanying our consolidated financial statements for additional disclosures concerning derivatives.

Accounting guidance regarding fair value measurements addresses how companies should measure fair value when they are required to use a fair value measure for recognition or disclosure purposes under GAAP and provides a common definition of fair value to be used throughout GAAP. See note 10, "Fair Value," of the notes accompanying our consolidated financial statements for a summary of our financial assets and liabilities measured at fair value at December 31, 2016 and December 31, 2015 segregated by level in the fair value hierarchy.

• *Investable Assets in the 'Other' Segment*

Investable assets in the 'other' segment are managed by Watford Re. HPS Investment Partners, LLC (formerly Highbridge Principal Strategies, LLC) ("HPS") manages Watford Re's non-investment grade credit portfolios, and we manage Watford Re's investment grade portfolios, each under separate long term services agreements. The board of directors of Watford Re establishes their investment policies and guidelines. Watford Re's investments are accounted for using the fair value option with changes in the carrying value of such investments recorded in net realized gains or losses.

The following table summarizes investable assets in the ‘other’ segment:

	December 31, 2016	December 31, 2015
Cash	\$ 74,893	\$ 108,550
Investments accounted for using the fair value option:		
Term loan investments (par value: \$823,101 and \$841,047)	811,922	762,162
Fixed maturities	734,260	569,022
Short-term investments	309,127	285,923
Equity securities	2,314	—
Total investments accounted for using the fair value option	1,857,623	1,617,107
Securities sold but not yet purchased	(33,157)	(30,583)
Securities transactions entered into but not settled at the balance sheet date	(41,596)	1,033
Total investable assets included in ‘other’ segment	\$ 1,857,763	\$ 1,696,107

Premiums Receivable and Reinsurance Recoverables

At December 31, 2016, 81.0% of premiums receivable of \$1,072.4 million represented amounts not yet due, while amounts in excess of 90 days overdue were 5.2% of the total. At December 31, 2015, 80.8% of premiums receivable of \$983.4 million represented amounts not yet due, while amounts in excess of 90 days overdue were 5.3% of the total. Approximately 6.7% of the \$30.6 million of paid losses and loss adjustment expenses recoverable were in excess of 90 days overdue at December 31, 2016, compared to 3.9% of the \$38.5 million of paid losses and loss adjustment expenses recoverable at December 31, 2015. No collection issues were indicated on the amount in excess of 90 days overdue at December 31, 2016. At December 31, 2016 and 2015, our reserves for doubtful accounts were approximately \$21.0 million and \$15.7 million, respectively.

At December 31, 2016 and 2015, approximately 75.7% and 77.9% of reinsurance recoverables on paid and unpaid losses (not including ceded unearned premiums) of \$2.11 billion and \$1.87 billion, respectively, were due from carriers which had an A.M. Best rating of “A-” or better while 24.3% and 22.1%, respectively, were from companies not rated. For items not rated, over 90% of such amount was collateralized through reinsurance trusts or letters of credit at December 31, 2016 and 2015. The largest reinsurance recoverables from any one carrier was approximately 2.4% and 3.4%, respectively, of total shareholders’ equity available to Arch at December 31, 2016 and 2015.

The following table details our reinsurance recoverables at December 31, 2016:

	% of Total	A.M. Best Rating (1)
Everest Reinsurance Company	9.4	A+
Munich Reinsurance America, Inc.	8.6	A+
Hannover Rückversicherung AG	4.9	A+
Partner Reinsurance Company of the U.S.	4.8	A
Swiss Reinsurance America Corporation	4.7	A+
Lloyd’s syndicates (2)	4.7	A
XL Catlin plc	4.4	A
Transatlantic Reinsurance Company	4.3	A+
Berkley Insurance Company	4.0	A+
Odyssey America Reinsurance Corporation (3)	3.7	A
Allied World Assurance Company, Ltd.	2.4	A
All other (4)	44.1	
Total	100.0	

- (1) The financial strength ratings are as of February 16, 2017 and were assigned by A.M. Best based on its opinion of the insurer’s financial strength as of such date. An explanation of the ratings listed in the table follows: the rating of “A+” is designated “Superior”; and the “A” rating is designated “Excellent.”
- (2) The A.M. Best group rating of “A” (Excellent) has been applied to all Lloyd’s syndicates.
- (3) A significant portion of amounts due from Odyssey America Reinsurance Corporation is collateralized through reinsurance trusts.
- (4) Such amount included 19.9% due from companies rated “A-” or better and 24.2% from companies not rated. For items not rated, over 90% of such amount is collateralized through reinsurance trusts or letters of credit.

Reserves for Losses and Loss Adjustment Expenses

We establish reserves for losses and loss adjustment expenses (“Loss Reserves”) which represent estimates involving actuarial and statistical projections, at a given point in time, of our expectations of the ultimate settlement and administration costs of losses incurred. Estimating Loss Reserves is inherently difficult, which is exacerbated by the fact that we have relatively limited historical experience upon which to base such estimates. We utilize actuarial models as well as available historical insurance industry loss ratio experience and loss development patterns to assist in the establishment of Loss Reserves. Actual losses and loss adjustment expenses paid will deviate, perhaps substantially, from the reserve estimates reflected in our financial statements. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Reserves for Losses and Loss Adjustment Expenses” and “Business—Reserves” for further details.

Shareholders' Equity and Book Value per Share

Total shareholders' equity available to Arch was \$8.25 billion at December 31, 2016, compared to \$6.17 billion at December 31, 2015. The increase in 2016 was primarily attributable to the issuance of \$1.10 billion of convertible non-voting common equivalent preferred shares (included in common shareholders' equity) and \$450 million of non-cumulative preferred shares (included in preferred shareholders' equity), along with underwriting and investment returns.

The following table presents the calculation of book value per share:

(U.S. dollars in thousands, except share data)	December 31,	
	2016	2015
Total shareholders' equity available to Arch (2)	\$ 8,253,718	\$ 6,166,542
Less preferred shareholders' equity	772,555	325,000
Common shareholders' equity available to Arch (2)	\$ 7,481,163	\$ 5,841,542
Common shares and common share equivalents outstanding, net of treasury shares (1)	135,550,337	122,627,783
Book value per share (2)	\$ 55.19	\$ 47.64

- (1) Excludes the effects of 6,872,494 and 7,482,462 stock options and 381,461 and 413,364 restricted stock units outstanding at December 31, 2016 and December 31, 2015, respectively.
- (2) Balance for December 31, 2015 reflects a cumulative effect of an accounting change. See note 1, "General," of the notes accompanying our consolidated financial statements for additional information.

Liquidity and Capital Resources

This section does not include information specific to Watford Re. We do not guarantee or provide credit support for Watford Re, and our financial exposure to Watford Re is limited to our investment in Watford Re's common and preferred shares and counterparty credit risk (mitigated by collateral) arising from reinsurance transactions with Watford Re.

ACGL is a holding company whose assets primarily consist of the shares in its subsidiaries. Generally, ACGL depends on its available cash resources, liquid investments and dividends or other distributions from its subsidiaries to make payments, including the payment of debt service obligations and operating expenses it may incur and any dividends or liquidation amounts with respect to our preferred and common shares. ACGL's readily available cash, short-term investments and marketable securities, excluding amounts held by our regulated insurance and reinsurance subsidiaries, totaled \$4.3 million at December 31, 2016, compared to \$6.9 million at December 31, 2015. During 2016, ACGL received dividends of \$196.9 million from Arch Re Bermuda, our Bermuda-based reinsurer and insurer.

The ability of our regulated insurance and reinsurance subsidiaries to pay dividends or make distributions or other payments to us is dependent on their ability to meet applicable regulatory standards. Under Bermuda law, Arch Re Bermuda is required to maintain an enhanced capital requirement which must equal or exceed its minimum solvency margin (*i.e.*, the amount by which the value of its general business assets must exceed its general business liabilities) equal to the greatest of (1) \$100.0 million, (2) 50% of net premiums written (being gross premiums written less any premiums ceded by Arch Re Bermuda, but Arch Re Bermuda may not deduct more than 25% of gross premiums when computing net premiums written) and (3) 15% of net discounted aggregated losses and loss expense provisions and other insurance reserves. Arch Re Bermuda is prohibited from declaring or paying any dividends during any financial year if it is not in compliance with its enhanced capital requirement, minimum solvency margin or minimum liquidity ratio. In addition, Arch Re Bermuda is prohibited from declaring or paying in any financial year dividends of more than 25% of its total statutory capital and surplus (as shown on its previous financial year's statutory balance sheet) unless it files, at least seven days before payment of such dividends, with the Bermuda Monetary Authority ("BMA") an affidavit stating that it will continue to meet the required margins. In addition, Arch Re Bermuda is prohibited, without prior approval of the BMA, from reducing by 15% or more its total statutory capital, as set out in its previous year's statutory financial statements. As a Class 4 insurer, Arch Re Bermuda is required to maintain available statutory capital and surplus pertaining to its general business at a level equal to or in excess of its enhanced capital requirement ("ECR") which is established by reference to either the BSCR model ("BSCR") or an approved internal capital model. At December 31, 2016, as determined under Bermuda law, Arch Re Bermuda had statutory capital and surplus of \$7.88 billion (\$5.43 billion at December 31, 2015), which amounts were in compliance with Arch Re Bermuda's ECR at such date. Such amounts include ownership interests in U.S. insurance and reinsurance subsidiaries. Accordingly, Arch Re Bermuda can pay approximately \$1.97 billion to ACGL during 2016 without providing an affidavit to the BMA, as discussed above. Under BMA guidelines, the value of the assets of our insurance group (*i.e.*, the group of companies that conducts exclusively, or mainly, insurance business) must exceed the amount of the group's liabilities by the aggregate minimum margin of solvency of each qualifying member of the group (the "Group MSM"). A member is a qualifying member of the insurance group if it is subject to solvency requirements in the jurisdiction in which it is registered. We were in compliance with the Group MSM at December 31, 2016.

Our U.S. insurance and reinsurance subsidiaries are subject to insurance laws and regulations in the jurisdictions in which they operate. The ability of our regulated insurance subsidiaries to pay dividends or make distributions is dependent on their ability to meet applicable regulatory standards. These regulations

include restrictions that limit the amount of dividends or other distributions, such as loans or cash advances, available to shareholders without prior approval of the insurance regulatory authorities. Dividends or distributions, if any, made by Arch Re U.S. would result in an increase in available capital at Arch Capital Group (U.S.) Inc. (“Arch-U.S.”), a wholly-owned subsidiary of ACGL. During 2016, Arch-U.S. received dividends of \$25.0 million from Arch Re U.S. Arch Re U.S. can declare a maximum of approximately \$128.4 million of dividends during 2017 subject to the approval of the Commissioner of the Delaware Department of Insurance (“Commissioner”). In addition, with respect to dividends in excess of the \$128.4 million (extraordinary dividend), no payment can be made until (1) 30 days after the Commissioner has received notice of the declaration thereof and has not within such period disapproved such payments; or (2) the Commissioner shall have approved the payment within the 30-day period. Delaware insurance laws also require that the statutory surplus of Arch Re U.S. following any dividend or distribution be reasonable in relation to its outstanding liabilities and adequate to its financial needs.

AMIC, United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company have each been approved as an eligible mortgage insurer by Fannie Mae and Freddie Mac, subject to maintaining certain ongoing requirements (“eligible mortgage insurer”). In April 2015, the GSEs published comprehensive, revised requirements, known as the Private Mortgage Insurer Eligibility Requirements or “PMIERs.” As clarified and revised by the Guidance Letters issued by the GSEs in December 2016, the PMIERs apply to our eligible mortgage insurers, but do not apply to Arch Mortgage Guaranty Company, which is not GSE-approved. The PMIERs impose limitations on the type of risk insured, the forms and insurance policies issued, standards for the geographic and customer diversification of risk, procedures for claims handling, acceptable underwriting practices, standards for certain reinsurance cessions and financial requirements, among other things. The financial requirements require an eligible mortgage insurer’s available assets, which generally include only the most liquid assets of an insurer, to meet or exceed “minimum required assets” as of each quarter end. Minimum required assets are calculated from PMIERs tables with several risk dimensions (including origination year, original loan-to-value and original credit score of performing loans, and the delinquency status of non-performing loans) and are subject to a minimum amount.

The amount of assets required to satisfy the revised financial requirements of the PMIERs at any point in time will be affected by many factors, including macro-economic conditions, the size and composition of our eligible mortgage insurers’ mortgage insurance portfolio at the point in time, and the amount of risk ceded to reinsurers that may be deducted in our calculation of “minimum required assets.” Our eligible

mortgage insurers satisfied the PMIERs’ financial requirements as of December 31, 2016.

Under the PMIERs, AMIC was deemed to be a “newly-approved insurer.” As a result of this status, until January 2017, AMIC was subject to additional PMIER requirements, including restrictions on dividends to affiliates or making any investment, contribution or loan to any affiliate. Since January 2017, none of our eligible mortgage insurers are classified as a “newly-approved insurer” under PMIERs.

In conjunction with the acquisition of UGC and the related approval of the change of control by the GSEs, the GSEs imposed additional requirements on our eligible mortgage insurers, including maintaining capital in excess of PMIERs requirements on a consolidated basis and requiring notifications relating to certain integration activities.

Our U.S. mortgage insurance subsidiaries are subject to detailed regulation by their domiciliary and primary regulators, the Wisconsin Office of the Commissioner of Insurance (“Wisconsin OCI”) for AMIC and Arch Mortgage Guaranty Company, and the North Carolina Department of Insurance (“NC DOI”) for United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company, and by state insurance departments in each state in which they are licensed. As mandated by state insurance laws, mortgage insurers are generally mono-line companies restricted to writing a single type of insurance business, such as mortgage insurance business. Each company is subject to either Wisconsin or North Carolina statutory requirements as to payment of dividends. Generally, both Wisconsin and North Carolina law precludes any dividend before giving at least 30 days’ notice to the Wisconsin OCI or NC DOI, as applicable, and prohibits paying any dividend unless it is fair and reasonable to do so. In addition, the state regulators and the GSEs limit or restrict our eligible mortgage insurers’ ability to pay stockholder dividends or otherwise return capital to shareholders. Under North Carolina law, United Guaranty Residential Insurance Company can declare a maximum of approximately \$313.3 million of dividends during 2017 subject to the approval of the NC DOI. In certain instances, approval by the GSEs would be required for dividends or other forms of return of capital to shareholders due to the requirements under PMIERs, including the minimum required assets imposed on our eligible mortgage insurers by the GSEs. Such dividend would result in an increase in available capital at Arch U.S. MI Holdings Inc., a subsidiary of Arch-U.S.

In addition to meeting applicable regulatory standards, the ability of our insurance and reinsurance subsidiaries to pay dividends to intermediate parent companies owned by Arch Re Bermuda is also constrained by our dependence on the financial strength ratings of our insurance and reinsurance subsidiaries from independent rating agencies. The ratings from these agencies depend to a large extent on the capitalization levels of

our insurance and reinsurance subsidiaries. We believe that ACGL has sufficient cash resources and available dividend capacity to service its indebtedness and other current outstanding obligations.

Our insurance, reinsurance and mortgage insurance subsidiaries are required to maintain assets on deposit, which primarily consist of fixed maturities, with various regulatory authorities to support their operations. The assets on deposit are available to settle insurance and reinsurance liabilities to third parties. Our insurance and reinsurance subsidiaries maintain assets in trust accounts as collateral for insurance and reinsurance transactions with affiliated companies and also have investments in segregated portfolios primarily to provide collateral or guarantees for letters of credit to third parties. At December 31, 2016 and 2015, such amounts approximated \$5.48 billion and \$5.20 billion, respectively, excluding amounts related to the 'other' segment.

Our non-U.S. operations account for a significant percentage of our net premiums written. In general, the business written by our non-U.S. operations, which is heavily weighted towards reinsurance business, has been more profitable than the business written in our U.S. operations, which is weighted more towards insurance business. In general, our reinsurance segment has operated at a higher margin than our insurance segment, largely due to the mix and type of business written. A significant component of our pre-tax income is generated through our investment performance. We hold a substantial amount of our investable assets in our non-U.S. operations and, accordingly, a large portion of our investment income is produced in our non-U.S. operations. In addition, ACGL, through its subsidiaries, provides financial support to certain of its insurance subsidiaries and affiliates, through certain reinsurance arrangements beneficial to the ratings of such subsidiaries. Our U.S.-based insurance, reinsurance and mortgage insurance subsidiaries enter into separate reinsurance arrangements with Arch Re Bermuda covering individual lines of business. For the 2016 calendar year, the U.S. groups ceded business to Arch Re Bermuda at an aggregate net cession rate (*i.e.*, net of third party reinsurance) of approximately 53% (compared to 53% for 2015). All of the above factors have resulted in the non-U.S. group providing a higher contribution to our overall pre-tax income in the current period than the percentage of net premiums written would indicate.

Except as described in the above paragraph, or where express reinsurance, guarantee or other financial support contractual arrangements are in place, each of ACGL's subsidiaries or affiliates is solely responsible for its own liabilities and commitments (and no other ACGL subsidiary or affiliate is so responsible). Any reinsurance arrangements, guarantees or other financial support contractual arrangements that are in place are solely for the benefit of the ACGL subsidiary or affiliate involved and third parties (creditors or insureds of such entity) are not express beneficiaries of such arrangements.

The following table summarizes our cash flows from operating, investing and financing activities, excluding amounts related to the 'other' segment:

	Year Ended December 31,		
	2016	2015	2014
Total cash provided by (used for):			
Operating activities	\$ 1,109,913	\$ 705,128	\$ 997,815
Investing activities	(2,602,714)	(357,038)	(422,879)
Financing activities	1,830,042	(367,529)	(515,880)
Effects of exchange rate changes on foreign currency cash	(13,967)	(10,031)	(18,686)
Increase (decrease) in cash	<u>\$ 323,274</u>	<u>\$ (29,470)</u>	<u>\$ 40,370</u>

- Cash provided by operating activities for 2016 was higher than in 2015, primarily reflecting a higher level of premiums collected. The 2015 period also reflected a higher level of outflows related to our mortgage operations.
- Cash used for investing activities for 2016 was higher than in 2015. Activity for 2016 reflected our acquisition of UGC which closed on December 31, 2016, along with higher net purchases of investments than in the 2015 period.
- Cash provided by financing activities for 2016 reflected various capital raising activity, such as the issuance of \$950.0 million of senior notes, \$400.0 million of borrowings under our revolving loan facility and \$450.0 million of preferred shares in order to fund the cash consideration portion of the UGC acquisition. Cash flows also reflect a lower level of repurchases under our share repurchase program in 2016 compared to 2015.

Our insurance and reinsurance operations provide liquidity in that premiums are received in advance, sometimes substantially in advance, of the time losses are paid. The period of time from the occurrence of a claim through the settlement of the liability may extend many years into the future. Sources of liquidity include cash flows from operations, financing arrangements or routine sales of investments.

As part of our investment strategy, we seek to establish a level of cash and highly liquid short-term and intermediate-term securities which, combined with expected cash flow, is believed by us to be adequate to meet our foreseeable payment obligations. However, due to the nature of our operations, cash flows are affected by claim payments that may comprise large payments on a limited number of claims and which can fluctuate from year to year. We believe that our liquid investments and cash flow will provide us with sufficient liquidity in order to meet our claim payment obligations. However, the timing and amounts of actual claim payments related to recorded Loss Reserves vary based on many factors, including large individual losses, changes in the legal environment, as well as general market conditions. The ultimate amount of the claim payments could differ materially from our estimated amounts. Certain

lines of business written by us, such as excess casualty, have loss experience characterized as low frequency and high severity. The foregoing may result in significant variability in loss payment patterns. The impact of this variability can be exacerbated by the fact that the timing of the receipt of reinsurance recoverables owed to us may be slower than anticipated by us. Therefore, the irregular timing of claim payments can create significant variations in cash flows from operations between periods and may require us to utilize other sources of liquidity to make these payments, which may include the sale of investments or utilization of existing or new credit facilities or capital market transactions. If the source of liquidity is the sale of investments, we may be forced to sell such investments at a loss, which may be material.

Our investments in certain securities, including certain fixed income and structured securities, investments in funds accounted for using the equity method, other alternative investments and investments in ventures such as Watford Re and others may be illiquid due to contractual provisions or investment market conditions. If we require significant amounts of cash on short notice in excess of anticipated cash requirements, then we may have difficulty selling these investments in a timely manner or may be forced to sell or terminate them at unfavorable values. Our unfunded investment commitments totaled approximately \$1.29 billion at December 31, 2016 and are callable by our investment managers. The timing of the funding of investment commitments is uncertain and may require us to access cash on short notice.

At December 31, 2016, our investable assets were \$18.64 billion, excluding the \$1.86 billion of investable assets related to the 'other' segment. The primary goals of our asset liability management process are to satisfy the insurance liabilities, manage the interest rate risk embedded in those insurance liabilities and maintain sufficient liquidity to cover fluctuations in projected liability cash flows, including debt service obligations. Generally, the expected principal and interest payments produced by our fixed income portfolio adequately fund the estimated runoff of our insurance reserves. Although this is not an exact cash flow match in each period, the substantial degree by which the fair value of the fixed income portfolio exceeds the expected present value of the net insurance liabilities, as well as the positive cash flow from newly sold policies and the large amount of high quality liquid bonds, provide assurance of our ability to fund the payment of claims and to service our outstanding debt without having to sell securities at distressed prices or access credit facilities.

Changes in general economic conditions, including new or continued sovereign debt concerns in Eurozone countries or downgrades of U.S. securities by credit rating agencies, could have a material adverse effect on financial markets and economic conditions in the U.S. and throughout the world. In turn, this could have a material adverse effect on our business,

financial condition and results of operations and, in particular, this could have a material adverse effect on the value and liquidity of securities in our investment portfolio. Our investment portfolio as of December 31, 2016 included \$187.4 million of securities issued and/or guaranteed by Eurozone governments at fair value, \$2.80 billion of obligations of the U.S. government and government agencies at fair value and \$3.71 billion of municipal bonds at fair value. Please refer to Item 1A "Risk Factors" for a discussion of other risks relating to our business and investment portfolio.

On December 31, 2016, we completed the acquisition of UGC pursuant to the Stock Purchase Agreement with AIG. The aggregate purchase price paid by ACGL was approximately \$3.26 billion, consisting of cash consideration of \$2.16 billion and convertible non-voting common-equivalent preference shares of ACGL with a fair value of approximately \$1.10 billion.

In September 2016, ACGL completed a \$450.0 million underwritten public offering of 18.0 million depositary shares, each of which represents a 1/1,000th interest in a share of its 5.25% Non-Cumulative Preferred Shares, Series E, have a \$0.01 par value and \$25,000 liquidation preference per share (equivalent to \$25 liquidation preference per depositary share). Except in specified circumstances relating to certain tax or corporate events, the preferred shares are not redeemable prior to September 29, 2021. We used the net proceeds from the offering of \$434.9 million to fund a portion of the UGC acquisition.

In October 2016, we entered into a five-year agreement for a \$500.0 million unsecured revolving loan and letter of credit facility and a \$350.0 million secured letter of credit facility. We borrowed the full remaining capacity available from the unsecured revolving loan and letter of credit facility (\$400.0 million) and used the proceeds to fund a portion of the UGC acquisition. At December 31, 2016, we had no remaining capacity under the unsecured revolving loan facility and \$187.9 million of remaining capacity under the secured letter of credit facility. Refer to note 16, "Commitments and Contingencies—Letter of Credit and Revolving Credit Facilities," of the notes accompanying our consolidated financial statements for a discussion of our available facilities, applicable covenants on such facilities and available capacity.

In December 2016, Arch Capital Finance LLC ("Arch Finance"), a wholly-owned subsidiary of ACGL, completed a public offering of \$500.0 million principal amount of 4.011% senior notes issued at par and due December 15, 2026 ("2026 notes") and \$450.0 million principal amount of 5.031% senior notes issued at par and due December 15, 2046 ("2046 notes"), both fully and unconditionally guaranteed by ACGL. The 2026 notes and 2046 notes are unsecured and unsubordinated obligations of Arch Finance and ACGL, respectively, and rank equally and ratably with the other unsecured unsubordinated indebtedness of Arch-U.S. and ACGL. We used the combined

net proceeds from the offering of 2026 notes and 2046 notes of \$940.7 million to fund a portion of the UGC acquisition.

Pursuant to our 2014 acquisition of the CMG Entities, we are required to make contingent consideration payments based on the closing book value of the pre-closing portfolio of the CMG Entities as re-calculated over an earn-out period and payable at the third, fifth and sixth anniversaries after closing (subject to a one time extension period of one to three years at the sellers' discretion). The maximum amount of contingent consideration payments is \$136.9 million over the earn-out period (or 150% of the closing book value of the CMG Entities less amounts paid at closing). We currently expect that the maximum amount will be paid over the earn-out period and that the first payment, due in April 2017, will be approximately \$70 million. To the extent that the adjusted book value of the CMG Entities drops below the cumulative amount paid by us, no additional payments would be due.

We expect that our liquidity needs, including our anticipated insurance obligations and operating and capital expenditure needs, for the next twelve months, at a minimum, will be met by funds generated from underwriting activities and investment income, as well as by our balance of cash, short-term investments, proceeds on the sale or maturity of our investments, and our credit facilities.

In addition, we monitor our capital adequacy on a regular basis and will seek to adjust our capital base (up or down) according to the needs of our business. The future capital requirements of our business will depend on many factors, including our ability to write new business successfully and to establish premium rates and reserves at levels sufficient to cover losses. Our ability to underwrite is largely dependent upon the quality of our claims paying and financial strength ratings as evaluated by independent rating agencies. In particular, we require (1) sufficient capital to maintain our financial strength ratings, as issued by several ratings agencies, at a level considered necessary by management to enable our key operating subsidiaries to compete; (2) sufficient capital to enable our underwriting subsidiaries to meet the capital adequacy tests performed by statutory agencies in the U.S. and other key markets; and (3) our non-U.S. operating companies are required to post letters of credit and other forms of collateral that are necessary for them to operate as they are "non-admitted" under U.S. state insurance regulations.

As part of our capital management program, we may seek to raise additional capital or may seek to return capital to our shareholders through share repurchases, cash dividends or other methods (or a combination of such methods). Any such determination will be at the discretion of our board of directors and will be dependent upon our profits, financial requirements and other factors, including legal restrictions, rating agency requirements and such other factors as our board of directors deems relevant.

The board of directors of ACGL has authorized the investment in ACGL's common shares through a share repurchase program. Since the inception of the share repurchase program through December 31, 2016, ACGL has repurchased approximately 125.2 million common shares for an aggregate purchase price of \$3.68 billion. At December 31, 2016, approximately \$446.5 million of share repurchases were available under the program. Repurchases under the program may be effected from time to time in open market or privately negotiated transactions through December 31, 2019. The timing and amount of the repurchase transactions under this program will depend on a variety of factors, including market conditions and corporate and regulatory considerations. We will continue to monitor our share price and, depending upon results of operations, market conditions and the development of the economy, as well as other factors, we will consider share repurchases on an opportunistic basis.

To the extent that our existing capital is insufficient to fund our future operating requirements or maintain such ratings, we may need to raise additional funds through financings or limit our growth. We can provide no assurance that, if needed, we would be able to obtain additional funds through financing on satisfactory terms or at all. Any adverse developments in the financial markets, such as disruptions, uncertainty or volatility in the capital and credit markets, may result in realized and unrealized capital losses that could have a material adverse effect on our results of operations, financial position and our businesses, and may also limit our access to capital required to operate our business.

If we are not able to obtain adequate capital, our business, results of operations and financial condition could be adversely affected, which could include, among other things, the following possible outcomes: (1) potential downgrades in the financial strength ratings assigned by ratings agencies to our operating subsidiaries, which could place those operating subsidiaries at a competitive disadvantage compared to higher-rated competitors; (2) reductions in the amount of business that our operating subsidiaries are able to write in order to meet capital adequacy-based tests enforced by statutory agencies; and (3) any resultant ratings downgrades could, among other things, affect our ability to write business and increase the cost of bank credit and letters of credit. In addition, under certain of the reinsurance agreements assumed by our reinsurance operations, upon the occurrence of a ratings downgrade or other specified triggering event with respect to our reinsurance operations, such as a reduction in surplus by specified amounts during specified periods, our ceding company clients may be provided with certain rights, including, among other things, the right to terminate the subject reinsurance agreement and/or to require that our reinsurance operations post additional collateral.

In addition to common share capital, we depend on external sources of finance to support our underwriting activities, which

can be in the form (or any combination) of debt securities, preference shares, common equity and bank credit facilities providing loans and/or letters of credit. As noted above, equity or debt financing, if available at all, may be on terms that are unfavorable to us. In the case of equity financings, dilution to our shareholders could result, and, in any case, such securities may have rights, preferences and privileges that are senior to those of our outstanding securities.

In November 2016, ACG, Arch-U.S. and Arch Finance filed a universal shelf registration statement with the SEC. This registration statement allows for the possible future offer and sale by us of various types of securities, including unsecured debt securities, preference shares, common shares, warrants, share purchase contracts and units and depositary shares. The shelf registration statement enables us to efficiently access the public debt and/or equity capital markets in order to meet our future capital needs. The shelf registration statement also allows selling shareholders to resell common shares that they own in one or more offerings from time to time. We will not receive any proceeds from any shares offered by the selling shareholders. This report is not an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

At December 31, 2016, total capital available to Arch of \$10.49 billion consisted of \$1.73 billion of senior notes, representing 16.5% of the total, \$500.0 million of revolving credit agreement borrowings due in October 2021, representing 4.8% of the total, \$772.6 million of preferred shares, representing 7.4% of the total, and common shareholders' equity of \$7.48 billion, representing 71.3% of the total. At December 31, 2015, total capital available to Arch of \$7.06 billion consisted of \$791.3 million of senior notes, representing 11.2% of the total, \$100.0 million of revolving credit agreement borrowings, representing 1.4% of the total, \$325.0 million of preferred shares, representing 4.6% of the total, and common shareholders' equity of \$5.84 billion, representing 82.8% of the total. The increase in total capital in 2016 was primarily attributable to capital raising activity related to the UGC acquisition and underwriting and investing returns.

NATURAL AND MAN-MADE CATASTROPHIC EVENTS

We have large aggregate exposures to natural and man-made catastrophic events. Catastrophes can be caused by various events, including hurricanes, floods, windstorms, earthquakes, hailstorms, tornados, explosions, severe winter weather, fires, droughts and other natural disasters. Catastrophes can also cause losses in non-property business such as workers' compensation or general liability. In addition to the nature of property business, we believe that economic and geographic

trends affecting insured property, including inflation, property value appreciation and geographic concentration, tend to generally increase the size of losses from catastrophic events over time.

We have substantial exposure to unexpected, large losses resulting from future man-made catastrophic events, such as acts of war, acts of terrorism and political instability. These risks are inherently unpredictable. It is difficult to predict the timing of such events with statistical certainty or estimate the amount of loss any given occurrence will generate. It is not possible to completely eliminate our exposure to unforecasted or unpredictable events and, to the extent that losses from such risks occur, our financial condition and results of operations could be materially adversely affected. Therefore, claims for natural and man-made catastrophic events could expose us to large losses and cause substantial volatility in our results of operations, which could cause the value of our common shares to fluctuate widely. In certain instances, we specifically insure and reinsure risks resulting from terrorism. Even in cases where we attempt to exclude losses from terrorism and certain other similar risks from some coverages written by us, we may not be successful in doing so. Moreover, irrespective of the clarity and inclusiveness of policy language, there can be no assurance that a court or arbitration panel will limit enforceability of policy language or otherwise issue a ruling adverse to us.

We seek to limit our loss exposure by writing a number of our reinsurance contracts on an excess of loss basis, adhering to maximum limitations on reinsurance written in defined geographical zones, limiting program size for each client and prudent underwriting of each program written. In the case of proportional treaties, we may seek per occurrence limitations or loss ratio caps to limit the impact of losses from any one or series of events. In our insurance operations, we seek to limit our exposure through the purchase of reinsurance. We cannot be certain that any of these loss limitation methods will be effective. We also seek to limit our loss exposure by geographic diversification. Geographic zone limitations involve significant underwriting judgments, including the determination of the area of the zones and the inclusion of a particular policy within a particular zone's limits. There can be no assurance that various provisions of our policies, such as limitations or exclusions from coverage or choice of forum, will be enforceable in the manner we intend. Disputes relating to coverage and choice of legal forum may also arise. Underwriting is inherently a matter of judgment, involving important assumptions about matters that are inherently unpredictable and beyond our control, and for which historical experience and probability analysis may not provide sufficient guidance. One or more catastrophic or other events could result in claims that substantially exceed our expectations, which could have a material adverse effect on our financial condition or our results of operations, possibly to the extent of eliminating our shareholders' equity.

For our natural catastrophe exposed business, we seek to limit the amount of exposure we will assume from any one insured or reinsured and the amount of the exposure to catastrophe losses from a single event in any geographic zone. We monitor our exposure to catastrophic events, including earthquake and wind and periodically reevaluate the estimated probable maximum pre-tax loss for such exposures. Our estimated probable maximum pre-tax loss is determined through the use of modeling techniques, but such estimate does not represent our total potential loss for such exposures. Our models employ both proprietary and vendor-based systems and include cross-line correlations for property, marine, offshore energy, aviation, workers compensation and personal accident. We seek to limit the probable maximum pre-tax loss to a specific level for severe catastrophic events. Currently, we seek to limit our 1-in-250 year return period net probable maximum loss from a severe catastrophic event in any geographic zone to approximately 25% of total shareholders' equity. We reserve the right to change this threshold at any time. Net probable maximum loss estimates are net of expected reinsurance recoveries, before income tax and before excess reinsurance reinstatement premiums. Loss estimates are reflective of the zone indicated and not the entire portfolio. Since hurricanes and windstorms can affect more than one zone and make multiple landfalls, our loss estimates include clash estimates from other zones. Our loss estimates do not represent our maximum exposures and it is highly likely that our actual incurred losses would vary materially from the modeled estimates. There can be no assurances that we will not suffer pre-tax losses greater than 25% of our total shareholders' equity from one or more catastrophic events due to several factors, including the inherent uncertainties in estimating the frequency and severity of such events and the margin of error in making such determinations resulting from potential inaccuracies and inadequacies in the data provided by clients and brokers, the modeling techniques and the application of such techniques or as a result of a decision to change the percentage of shareholders' equity exposed to a single catastrophic event. In addition, actual losses may increase if our reinsurers fail to meet their obligations to us or the reinsurance protections purchased by us are exhausted or are otherwise unavailable. See "Risk Factors—Risk Relating to Our Industry." Depending on business opportunities and the mix of business that may comprise our insurance and reinsurance portfolio, we may seek to adjust our self-imposed limitations on probable maximum pre-tax loss for catastrophe exposed business. See "—Critical Accounting Policies, Estimates and Recent Accounting Pronouncements—Ceded Reinsurance" for a discussion of our catastrophe reinsurance programs.

CONTRACTUAL OBLIGATIONS AND COMMERCIAL COMMITMENTS

The following section does not include information specific to Watford Re. We do not guarantee or provide credit support for

Watford Re, and our financial exposure to Watford Re is limited to our investment in Watford Re's common and preferred shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions.

Letter of Credit and Revolving Credit Facilities

As of December 31, 2016, ACGL and certain of its subsidiaries had a \$350.0 million secured facility for letters of credit and a \$500.0 million unsecured facility for revolving loans and letters of credit (the "Credit Agreement"). Obligations of each borrower under the secured facility for letters of credit are secured by cash and eligible securities of such borrower held in collateral accounts. Subject to the receipt of commitments, the secured facility may be increased by up to an aggregate of \$350.0 million, and the unsecured facility may be increased to an amount not to exceed \$750.0 million. ACGL has a one-time option to convert any or all outstanding revolving loans of ACGL and/or Arch-U.S. to term loans with the same terms as the revolving loans except that any prepayments may not be reborrowed. Arch-U.S. guarantees the obligations of ACGL, and ACGL guarantees the obligations of Arch-U.S. Borrowings of revolving loans may be made at a variable rate based on LIBOR or an alternative base rate at the option of ACGL. Secured letters of credit are available for issuance on behalf of ACGL insurance and reinsurance subsidiaries. The Credit Agreement and related documents are structured such that each party that requests a letter of credit or borrowing does so only for itself and for only its own obligations.

The Credit Agreement contains customary representations, conditions to issuance of letters of credit and borrowings which include, among other things: (i) the maintenance of a debt to total capital ratio of not greater than 0.35 to 1; (ii) consolidated tangible net worth in excess of \$5.63 billion plus 25% of future aggregate net income (not including any future net losses) for each quarterly period ending after December 31, 2016 plus 25% of future aggregate net cash proceeds from the issuance of common or preferred equity (other than the proceeds of which are used to fund the repurchase or redemption of our preferred securities ("Refinanced Preferred Securities")), minus 70% of up to \$750.0 million of the aggregate book value of any preferred securities of ACGL which are repurchased or redeemed by ACGL or its subsidiaries (other than Refinanced Preferred Securities); and (iii) that ACGL's principal insurance and reinsurance subsidiaries that are borrowers under the Credit Agreement maintain a financial strength rating of at least a "B++" from A.M. Best or "BBB+" from S&P. In addition, certain of ACGL's subsidiaries which are party to the Credit Agreement are required to maintain minimum shareholders' equity levels. Commitments under the Amended Credit Agreement will expire on October 26, 2021, and all loans then outstanding under the Amended Credit Agreement must be repaid. Letters of credit issued under the Amended Credit Agreement will not have an expiration date later than October 26, 2022. ACGL and its subsidiaries which are party to the Credit Agreement were

in compliance with all covenants contained in the Credit Agreement at December 31, 2016.

In addition, certain of ACGL's subsidiaries had outstanding letters of credit of \$178.5 million, which were issued on a limited basis and for limited purposes (together with the secured portion of the Credit Agreement and these letter of credit facilities, the "LOC Facilities"). The principal purpose of the LOC Facilities is to issue, as required, evergreen standby letters of credit in favor of primary insurance or reinsurance counterparties with which we have entered into reinsurance arrangements to ensure that such counterparties are permitted to take credit for reinsurance obtained from our reinsurance subsidiaries in United States jurisdictions where such subsidiaries are not licensed or otherwise admitted as an insurer, as required under insurance regulations in the United States, and to comply with requirements of Lloyd's of London in connection with qualifying quota share and other arrangements. The amount of letters of credit issued is driven by, among other things, the timing and payment of catastrophe losses, loss development of existing reserves, the payment pattern of such reserves, the further expansion of our business and the loss experience of such business. When issued, these letters of credit are secured by a portion of our investment portfolio. In addition, the LOC Facilities also require the maintenance of certain covenants, which we were in compliance with at December 31, 2016. At such date, we had approximately \$340.6 million in outstanding letters of credit under the LOC Facilities, which were secured by investments with a fair value of \$400.2 million, and had \$500.0 million of borrowings outstanding under the Credit Agreement. Under the \$350.0 million secured letter of credit facility, we had remaining capacity of \$187.9 million at December 31, 2016.

Senior Notes

On May 4, 2004, ACGL completed a public offering of \$300.0 million principal amount of 7.35% senior notes due May 1, 2034 ("2034 notes"). The 2034 notes are ACGL's senior unsecured obligations and rank equally with all of its existing and future senior unsecured indebtedness. Interest payments on the 2034 notes are due on May 1st and November 1st of each year. ACGL may redeem the 2034 notes at any time and from time to time, in whole or in part, at a "make-whole" redemption price. The fair value of the 2034 notes at December 31, 2016 and 2015 was \$392.0 million and \$390.1 million, respectively.

On December 13, 2013, Arch-U.S., a wholly-owned subsidiary of ACGL, completed a public offering of \$500.0 million principal amount of 5.144% senior notes due November 1, 2043 ("2043 notes"), fully and unconditionally guaranteed by ACGL. The 2043 notes are unsecured and unsubordinated obligations of Arch-U.S. and ACGL, respectively, and rank equally and

ratably with the other unsecured and unsubordinated indebtedness of Arch-U.S. and ACGL, respectively. Interest payments on the 2043 notes are due on May 1st and November 1st of each year. Arch-U.S. may redeem the 2043 notes at any time and from time to time, in whole or in part, at a "make-whole" redemption price. The fair value of the 2043 notes at December 31, 2016 and 2015 was \$521.6 million and \$513.9 million, respectively.

On December 8, 2016, Arch Finance, a wholly-owned subsidiary of ACGL, completed a public offering of \$500.0 million principal amount of 4.011% senior notes due December 15, 2026 ("2026 notes"), fully and unconditionally guaranteed by ACGL. The 2026 notes are unsecured and unsubordinated obligations of Arch Finance and ACGL, respectively, and rank equally and ratably with the other unsecured and unsubordinated indebtedness of Arch Finance and ACGL, respectively. Interest payments on the 2026 notes are due on June 15th and December 15th of each year. Arch Finance may redeem the 2026 notes at any time and from time to time, in whole or in part, at a "make-whole" redemption price. The fair value of the 2026 notes at December 31, 2016 was \$509.3 million.

On December 8, 2016, Arch Finance completed a public offering of \$450.0 million principal amount of 5.031% senior notes due December 15, 2046 ("2046 notes"), fully and unconditionally guaranteed by ACGL. The 2046 notes are unsecured and unsubordinated obligations of Arch Finance and ACGL, respectively, and rank equally and ratably with the other unsecured and unsubordinated indebtedness of Arch Finance and ACGL, respectively. Interest payments on the 2046 notes are due on June 15th and December 15th of each year. Arch Finance may redeem the 2046 notes at any time and from time to time, in whole or in part, at a "make-whole" redemption price. The fair value of the 2046 notes at December 31, 2016 was \$476.0 million.

ACGL and Arch-U.S. are each holding companies and, accordingly, they conduct substantially all of their operations through their operating subsidiaries. Arch Finance is a wholly owned subsidiary of Arch U.S. MI Holdings Inc., a U.S. holding company. As a result, ACGL, Arch-U.S. and Arch Finance's cash flows and their ability to service their debt depends upon the earnings of their operating subsidiaries and on their ability to distribute the earnings, loans or other payments from such subsidiaries to ACGL, Arch-U.S. and Arch Finance, respectively.

During 2016, 2015 and 2014, we made interest payments of \$50.4 million, \$49.6 million and \$46.4 million, respectively, related to our senior notes and other financing arrangements.

Contractual Obligations

The following table provides an analysis of our contractual commitments at December 31, 2016 (excluding amounts related to the ‘other’ segment’):

	Payment due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating activities					
Estimated gross payments for losses and loss adjustment expenses (1)	\$ 10,200,960	\$ 2,636,891	\$ 3,008,378	\$ 1,545,090	\$ 3,010,601
Deposit accounting liabilities (2)	22,150	1,038	1,015	1,652	18,445
Contractholder payables (3)	1,716,435	565,485	617,697	239,557	293,696
Operating lease obligations	178,096	29,881	56,578	42,166	49,471
Purchase obligations	24,807	18,280	6,527	—	—
Contingent consideration liabilities (6)	95,193	28,215	33,489	33,489	—
Investing activities					
Unfunded investment commitments (4)	1,286,218	1,286,218	—	—	—
Financing activities					
Securities lending payable (5)	762,554	762,554	—	—	—
Senior notes (including interest payments)	3,710,810	93,192	180,929	180,929	3,255,760
Contingent consideration liabilities (6)	41,762	41,762	—	—	—
Capital lease obligations	25,420	10,784	14,636	—	—
Revolving credit agreement borrowings (7)	500,000	500,000	—	—	—
Total	\$ 18,564,405	\$ 5,974,300	\$ 3,919,249	\$ 2,042,883	\$ 6,627,973

- (1) The estimated expected contractual commitments related to the reserves for losses and loss adjustment expenses are presented on a gross basis (*i.e.*, not reflecting any corresponding reinsurance recoverable amounts that would be due to us). It should be noted that until a claim has been presented to us, determined to be valid, quantified and settled, there is no known obligation on an individual transaction basis, and while estimable in the aggregate, the timing and amount contain significant uncertainty. Approximately 63% of our reserves for losses and loss adjustment expenses were incurred but not reported at December 31, 2016.
- (2) The estimated expected contractual commitments related to deposit accounting liabilities have been estimated using projected cash flows from the underlying contracts. It should be noted that, due to the nature of such liabilities, the timing and amount contain significant uncertainty.
- (3) Certain insurance policies written by our insurance operations feature large deductibles, primarily in construction and national accounts lines. Under such contracts, we are obligated to pay the claimant for the full amount of the claim and are subsequently reimbursed by the policyholder for the deductible amount. In the event we are unable to collect from the policyholder, we would be liable for such defaulted amounts.
- (4) Unfunded investment commitments are callable by our investment managers. We have assumed that such investments will be funded in the next year but the funding may occur over a longer period of time, due to market conditions and other factors.
- (5) As part of our securities lending program, we loan securities to third parties and receive collateral in the form of cash or securities. Such collateral is due back to the third parties at the close of the securities lending transactions, a majority of which is overnight and continuous by nature.
- (6) Pursuant to our 2014 acquisition of the CMG Entities, we are required to make contingent consideration payments based on the closing book value of the pre-closing portfolio of the CMG Entities as re-calculated over an earn-out period and payable at the third, fifth and sixth anniversaries after closing (subject to a one time extension period of one to three years at the sellers’ discretion). The maximum amount of contingent consideration payments over the earn-out period is \$136.9 million (or 150% of the closing book value of the CMG Entities less amounts paid at closing). For purposes of this table, the maximum exposure has been shown using an estimated payout pattern.
- (7) Amounts outstanding under credit facilities include \$100 million borrowed by ACGL and \$400 million borrowed by Arch U.S. MI Holdings Inc., its wholly owned subsidiary. Due to the variable nature of the interest payments on these borrowings and the ability to repay such borrowings at will, no interest payments have been reflected.

OFF-BALANCE SHEET ARRANGEMENTS

Bellemeade Re I Ltd. and Bellemeade Re II Ltd. are special purpose variable interest entities that are not consolidated in our financial results because we do not have the unilateral power to direct those activities that are significant to its economic performance. As of December 31, 2016, our estimated off-balance sheet maximum exposure to loss from Bellemeade Re was \$2.4 million. See note 4, “Variable Interest Entities—Bellemeade Re I and II,” of the notes accompanying our consolidated financial statements for additional information.

MARKET SENSITIVE INSTRUMENTS AND RISK MANAGEMENT

Our investment results are subject to a variety of risks, including risks related to changes in the business, financial condition or results of operations of the entities in which we invest, as well as changes in general economic conditions and overall market conditions. We are also exposed to potential loss from various market risks, including changes in equity prices, interest rates and foreign currency exchange rates.

In accordance with the SEC’s Financial Reporting Release No. 48, we performed a sensitivity analysis to determine the effects that market risk exposures could have on the future earnings, fair values or cash flows of our financial instruments as of December 31, 2016. Market risk represents the risk of changes in the fair value of a financial instrument and consists of several components, including liquidity, basis and price risks.

The sensitivity analysis performed as of December 31, 2016 presents hypothetical losses in cash flows, earnings and fair values of market sensitive instruments which were held by us on December 31, 2016 and are sensitive to changes in interest rates and equity security prices. This risk management discussion and the estimated amounts generated from the following sensitivity analysis represent forward-looking statements of market risk assuming certain adverse market conditions occur. Actual results in the future may differ materially from these projected results due to actual developments in the global financial markets. The analysis methods used by us to assess and mitigate risk should not be considered projections of future events or losses.

We have not included Watford Re in the following analyses as we do not guarantee or provide credit support for Watford Re, and our financial exposure to Watford Re is limited to its investment in Watford Re’s common and preferred shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions.

The focus of the SEC’s market risk rules is on price risk. For purposes of specific risk analysis, we employ sensitivity

analysis to determine the effects that market risk exposures could have on the future earnings, fair values or cash flows of our financial instruments. The financial instruments included in the following sensitivity analysis consist of all of our investments and cash.

Investment Market Risk

Fixed Income Securities. We invest in interest rate sensitive securities, primarily debt securities. We consider the effect of interest rate movements on the market value of our fixed maturities, fixed maturities pledged under securities lending agreements, short-term investments and certain of our other investments which invest in fixed income securities and the corresponding change in unrealized appreciation. As interest rates rise, the market value of our interest rate sensitive securities falls, and the converse is also true. Based on historical observations, there is a low probability that all interest rate yield curves would shift in the same direction at the same time. Furthermore, at times interest rate movements in certain credit sectors exhibit a much lower correlation to changes in U.S. Treasury yields. Accordingly, the actual effect of interest rate movements may differ materially from the amounts set forth in the following tables.

The following table summarizes the effect that an immediate, parallel shift in the interest rate yield curve would have had on our investment portfolio at December 31, 2016 and 2015:

(U.S. dollars in billions)	Interest Rate Shift in Basis Points				
	-100	-50	-	+50	+100
Dec. 31, 2016					
Total fair value	\$ 17.95	\$ 17.62	\$ 17.31	\$ 17.00	\$ 16.70
Change from base	3.7%	1.8%		(1.8)%	(3.5)%
Change in unrealized value	\$ 0.64	\$ 0.31		\$ (0.31)	\$ (0.61)
Dec. 31, 2015					
Total fair value	\$ 14.04	\$ 13.80	\$ 13.57	\$ 13.34	\$ 13.12
Change from base	3.4%	1.7%		(1.7)%	(3.3)%
Change in unrealized value	\$ 0.47	\$ 0.23		\$ (0.23)	\$ (0.45)

In addition, we consider the effect of credit spread movements on the market value of our fixed maturities, fixed maturities pledged under securities lending agreements, short-term investments and certain of our other investments and investment funds accounted for using the equity method which invest in fixed income securities and the corresponding change in unrealized appreciation. As credit spreads widen, the fair value of our fixed income securities falls, and the converse is also true.

The following table summarizes the effect that an immediate, parallel shift in credit spreads in a static interest rate environment would have had on the portfolio at December 31, 2016 and 2015:

(U.S. dollars in billions)	Credit Spread Shift in Percentage				
	-100	-50	-	+50	+100
Dec. 31, 2016					
Total fair value	\$ 17.79	\$ 17.55	\$ 17.31	\$ 17.07	\$ 16.83
Change from base	2.8%	1.4%		(1.4)%	(2.8)%
Change in unrealized value	\$ 0.48	\$ 0.24		\$ (0.24)	\$ (0.48)
Dec. 31, 2015					
Total fair value	\$ 13.97	\$ 13.77	\$ 13.57	\$ 13.37	\$ 13.17
Change from base	3.0%	1.5%		(1.5)%	(3.0)%
Change in unrealized value	\$ 0.40	\$ 0.20		\$ (0.20)	\$ (0.40)

Another method that attempts to measure portfolio risk is Value-at-Risk (“VaR”). VaR attempts to take into account a broad cross-section of risks facing a portfolio by utilizing relevant securities volatility data skewed towards the most recent months and quarters. VaR measures the amount of a portfolio at risk for outcomes 1.65 standard deviations from the mean based on normal market conditions over a one year time horizon and is expressed as a percentage of the portfolio’s initial value. In other words, 95% of the time, should the risks taken into account in the VaR model perform per their historical tendencies, the portfolio’s loss in any one year period is expected to be less than or equal to the calculated VaR, stated as a percentage of the measured portfolio’s initial value. As of December 31, 2016, our portfolio’s VaR was estimated to be 3.75%, compared to an estimated 3.01% at December 31, 2015.

Equity Securities, Privately Held Securities and Other Investments. Our investment portfolio includes an allocation to equity securities, privately held securities and certain other investments. At December 31, 2016 and 2015, the fair value of our investments in equity securities, privately held securities and certain other investments totaled \$558.0 million and \$630.0 million, respectively. These securities are exposed to price risk, which is the potential loss arising from decreases in fair value. An immediate hypothetical 10% depreciation in the value of each position would reduce the fair value of such investments by approximately \$55.8 million and \$63.0 million at December 31, 2016 and 2015, respectively, and would have decreased book value per share by approximately \$0.41 and \$0.51, respectively.

Investment-Related Derivatives. At December 31, 2016, the notional value of all derivative instruments (excluding to-be-announced mortgage backed securities which are included in the fixed income securities analysis above and foreign currency forward contracts which are included in the foreign currency exchange risk analysis below) was \$2.12 billion, compared to

\$2.81 billion at December 31, 2015. If the underlying exposure of each investment-related derivative held at December 31, 2016 depreciated by 100 basis points, it would have resulted in a reduction in net income of approximately \$21.2 million, and a decrease in book value per share of \$0.16, compared to \$28.1 million and \$0.23, respectively, on investment-related derivatives held at December 31, 2015. If the underlying exposure of each investment-related derivative held at December 31, 2016 appreciated by 100 basis points, it would have resulted in an increase in net income of approximately \$21.2 million, and an increase in book value per share of \$0.16, compared to \$28.1 million and \$0.23, respectively, on investment-related derivatives held at December 31, 2015. See note 11, “Derivative Instruments,” of the notes accompanying our consolidated financial statements for additional disclosures concerning derivatives.

For further discussion on investment activity, please refer to “—Financial Condition, Liquidity and Capital Resources—Financial Condition—Investable Assets.”

Foreign Currency Exchange Risk

Foreign currency rate risk is the potential change in value, income and cash flow arising from adverse changes in foreign currency exchange rates. Through our subsidiaries and branches located in various foreign countries, we conduct our insurance and reinsurance operations in a variety of local currencies other than the U.S. Dollar. We generally hold investments in foreign currencies which are intended to mitigate our exposure to foreign currency fluctuations in our net insurance liabilities. We may also utilize foreign currency forward contracts and currency options as part of our investment strategy. See Note 11, “Derivative Instruments,” of the notes accompanying our consolidated financial statements for additional information.

The following table provides a summary of our net foreign currency exchange exposures, as well as foreign currency derivatives in place to manage these exposures:

(U.S. dollars in thousands, except per share data)	December 31, 2016	December 31, 2015
Net assets (liabilities), denominated in foreign currencies, excluding shareholders' equity and derivatives	\$ (63,077)	\$ (163,199)
Shareholders' equity denominated in foreign currencies (1)	290,752	328,133
Net foreign currency forward contracts outstanding (2)	(250,263)	(97,658)
Net exposures denominated in foreign currencies	\$ (22,588)	\$ 67,276
Pre-tax impact of a hypothetical 10% appreciation of the U.S. Dollar against foreign currencies:		
Shareholders' equity	\$ 2,259	\$ (6,728)
Book value per share	\$ 0.02	\$ (0.05)
Pre-tax impact of a hypothetical 10% decline of the U.S. Dollar against foreign currencies:		
Shareholders' equity	\$ (2,259)	\$ 6,728
Book value per share	\$ (0.02)	\$ 0.05

- (1) Represents capital contributions held in the foreign currencies of our operating units.
- (2) Represents the net notional value of outstanding foreign currency forward contracts.

Although the Company generally attempts to match the currency of its projected liabilities with investments in the same currencies, from time to time the Company may elect to over or underweight one or more currencies, which could increase the Company's exposure to foreign currency fluctuations and increase the volatility of the Company's shareholders' equity. Historical observations indicate a low probability that all foreign currency exchange rates would shift against the U.S. Dollar in the same direction and at the same time and, accordingly, the actual effect of foreign currency rate movements may differ materially from the amounts set forth above. For further discussion on foreign exchange activity, please refer to "—Results of Operations."

Effects of Inflation

We do not believe that inflation has had a material effect on our consolidated results of operations, except insofar as inflation may affect our reserves for losses and loss adjustment expenses and interest rates. The potential exists, after a catastrophe loss, for the development of inflationary pressures in a local economy. The anticipated effects of inflation on us are considered in our catastrophe loss models. The actual effects of inflation on our results cannot be accurately known until claims are ultimately settled.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Reference is made to the information appearing above under the subheading "Market Sensitive Instruments and Risk Management" under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operation," which information is hereby incorporated by reference.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
Arch Capital Group Ltd.:

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of Arch Capital Group Ltd. and its subsidiaries at December 31, 2016 and December 31, 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. In addition, in our opinion, the financial statement schedules listed in the index appearing under Item 15(a)(2) present fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting 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 (COSO). The Company's management is responsible for these financial statements and financial statement schedules, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedules, and on the Company's internal control over financial reporting based on our integrated 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 audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for deferred acquisition costs in 2016.

A company's internal control over financial reporting is a process designed 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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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 its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As described in Management's Annual Report on Internal Control over Financial Reporting, management has excluded United Guaranty Corporation and its subsidiaries from its assessment of internal control over financial reporting as of December 31, 2016 because it was acquired by the Company in a purchase business combination during 2016. We have also excluded United Guaranty Corporation and its subsidiaries from our audit of internal control over financial reporting. United Guaranty Corporation and its subsidiaries are wholly-owned subsidiaries whose total assets and total revenues represent 15.8% and 0.0%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2016.



/s/ PricewaterhouseCoopers LLP
New York, New York
March 1, 2017

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(U.S. dollars in thousands, except share data)

	December 31,	
	2016	2015
Assets		
Investments:		
Fixed maturities available for sale, at fair value (amortized cost: \$13,522,671 and \$10,515,440)	\$ 13,426,577	\$ 10,459,353
Short-term investments available for sale, at fair value (amortized cost: \$611,878 and \$591,141)	612,005	587,904
Collateral received under securities lending, at fair value (amortized cost: \$762,554 and \$385,984)	762,565	389,336
Equity securities available for sale, at fair value (cost: \$475,085 and \$543,767)	518,041	618,405
Other investments available for sale, at fair value (cost: \$149,077 and \$261,343)	167,970	300,476
Investments accounted for using the fair value option	3,421,220	2,894,494
Investments accounted for using the equity method	811,273	592,973
Total investments	19,719,651	15,842,941
Cash	842,942	553,326
Accrued investment income	124,483	87,206
Securities pledged under securities lending, at fair value (amortized cost: \$746,409 and \$386,411)	744,980	384,081
Premiums receivable	1,072,435	983,443
Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses	2,114,138	1,867,373
Contractholder receivables	1,717,436	1,486,296
Ceded unearned premiums	859,567	427,609
Deferred acquisition costs	447,560	382,829
Receivable for securities sold	58,284	45,505
Goodwill and intangible assets	781,553	97,531
Other assets	889,080	980,791
Total assets	\$ 29,372,109	\$ 23,138,931
Liabilities		
Reserve for losses and loss adjustment expenses	\$ 10,200,960	\$ 9,125,250
Unearned premiums	3,406,870	2,333,932
Reinsurance balances payable	300,407	224,120
Contractholder payables	1,717,436	1,486,296
Collateral held for insured obligations	301,406	248,982
Deposit accounting liabilities	22,150	260,364
Senior notes	1,732,258	791,306
Revolving credit agreement borrowings	756,650	530,434
Securities lending payable	762,554	393,844
Payable for securities purchased	76,183	64,996
Other liabilities	784,110	568,852
Total liabilities	20,060,984	16,028,376
Commitments and Contingencies		
Redeemable noncontrolling interests	205,553	205,182
Shareholders' Equity		
Non-cumulative preferred shares	772,555	325,000
Convertible non-voting common equivalent preferred shares	1,101,304	—
Common shares (\$0.0033 par, shares issued: 174,644,101 and 173,107,849)	582	577
Additional paid-in capital	531,687	467,339
Retained earnings	7,996,701	7,332,032
Accumulated other comprehensive income (loss), net of deferred income tax	(114,541)	(16,502)
Common shares held in treasury, at cost (shares: 51,856,584 and 50,480,066)	(2,034,570)	(1,941,904)
Total shareholders' equity available to Arch	8,253,718	6,166,542
Non-redeemable noncontrolling interests	851,854	738,831
Total shareholders' equity	9,105,572	6,905,373
Total liabilities, noncontrolling interests and shareholders' equity	\$ 29,372,109	\$ 23,138,931

See Notes to Consolidated Financial Statements

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(U.S. dollars in thousands, except share data)

Year Ended December 31,

	2016	2015	2014
Revenues			
Net premiums written	\$ 4,031,391	\$ 3,817,531	\$ 3,891,938
Change in unearned premiums	(146,569)	(83,626)	(298,190)
Net premiums earned	3,884,822	3,733,905	3,593,748
Net investment income	366,742	348,090	302,585
Net realized gains (losses)	137,586	(185,842)	102,917
Other-than-temporary impairment losses	(30,794)	(26,152)	(30,470)
Less investment impairments recognized in other comprehensive income, before taxes	352	6,036	320
Net impairment losses recognized in earnings	(30,442)	(20,116)	(30,150)
Other underwriting income	57,173	35,497	10,142
Equity in net income of investment funds accounted for using the equity method	48,475	25,455	19,883
Other income (loss)	(800)	(399)	(10,252)
Total revenues	4,463,556	3,936,590	3,988,873
Expenses			
Losses and loss adjustment expenses	2,185,599	2,050,903	1,919,250
Acquisition expenses	678,033	681,476	657,262
Other operating expenses	633,025	607,516	556,280
Corporate expenses	81,746	49,745	49,944
Interest expense	66,252	45,874	45,634
Net foreign exchange (gains) losses	(36,651)	(66,118)	(83,744)
Total expenses	3,608,004	3,369,396	3,144,626
Income before income taxes	855,552	567,194	844,247
Income taxes:			
Current tax expense	50,745	44,194	30,550
Deferred tax (benefit) expense	(19,371)	(3,582)	(7,563)
Income tax expense	31,374	40,612	22,987
Net income	\$ 824,178	\$ 526,582	\$ 821,260
Net (income) loss attributable to noncontrolling interests	(131,440)	11,156	13,095
Net income available to Arch	692,738	537,738	834,355
Preferred dividends	(28,070)	(21,938)	(21,938)
Net income available to Arch common shareholders	\$ 664,668	\$ 515,800	\$ 812,417
Net income per common share and common share equivalent			
Basic	\$ 5.50	\$ 4.24	\$ 6.21
Diluted	\$ 5.33	\$ 4.09	\$ 6.02
Weighted average common shares and common share equivalents outstanding			
Basic	120,792,114	121,786,127	130,817,610
Diluted	124,717,493	126,038,743	134,922,322

See Notes to Consolidated Financial Statements

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(U.S. dollars in thousands)

	Year Ended December 31,		
	2016	2015	2014
Comprehensive Income			
Net income	\$ 824,178	\$ 526,582	\$ 821,260
Other comprehensive income (loss), net of deferred income tax			
Unrealized appreciation (decline) in value of available-for-sale investments:			
Unrealized holding gains (losses) arising during period	(21,013)	(77,244)	146,330
Portion of other-than-temporary impairment losses recognized in other comprehensive income, net of deferred income tax	(352)	(6,036)	(320)
Reclassification of net realized gains, net of income taxes, included in net income	(56,361)	(28,233)	(65,104)
Foreign currency translation adjustments	(20,381)	(34,111)	(27,014)
Comprehensive income	726,071	380,958	875,152
Net (income) loss attributable to noncontrolling interests	(131,440)	11,156	13,095
Other comprehensive (income) loss attributable to noncontrolling interests	68	265	—
Comprehensive income available to Arch	\$ 594,699	\$ 392,379	\$ 888,247

See Notes to Consolidated Financial Statements

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(U.S. dollars in thousands)

	Year Ended December 31,		
	2016	2015	2014
Non-cumulative preferred shares			
Balance at beginning of year	\$ 325,000	\$ 325,000	\$ 325,000
Series E preferred shares issued	450,000	—	—
Series C preferred shares repurchased	(2,445)	—	—
Balance at end of year	772,555	325,000	325,000
Convertible non-voting common equivalent preferred shares			
Balance at beginning of year	—	—	—
Series D preferred shares issued	1,101,304	—	—
Balance at end of year	1,101,304	—	—
Common shares			
Balance at beginning of year	577	572	565
Common shares issued, net	5	5	7
Balance at end of year	582	577	572
Additional paid-in capital			
Balance at beginning of year	467,339	383,073	299,517
Common shares issued, net	11,919	10,576	9,590
Issue costs on Series E preferred shares	(15,101)	—	—
Exercise of stock options	9,448	15,926	18,662
Amortization of share-based compensation	56,581	56,096	54,789
Other	1,501	1,668	515
Balance at end of year	531,687	467,339	383,073
Retained earnings			
Balance at beginning of year	7,332,032	6,816,232	6,042,154
Cumulative effect of an accounting change (1)	—	—	(38,339)
Balance at beginning of year, as adjusted	7,332,032	6,816,232	6,003,815
Net income	824,178	526,582	821,260
Net (income) loss attributable to noncontrolling interests	(131,440)	11,156	13,095
Preferred share dividends	(28,070)	(21,938)	(21,938)
Balance at end of year	7,996,701	7,332,032	6,816,232
Accumulated other comprehensive income (loss)			
Balance at beginning of year	(16,502)	128,856	74,964
Unrealized appreciation (decline) in value of available-for-sale investments, net of deferred income tax:			
Balance at beginning of year	50,085	161,598	80,692
Unrealized holding gains (losses) arising during period, net of reclassification adjustment	(77,374)	(105,477)	81,226
Portion of other-than-temporary impairment losses recognized in other comprehensive income, net of deferred income tax	(352)	(6,036)	(320)
Balance at end of year	(27,641)	50,085	161,598
Foreign currency translation adjustments, net of deferred income tax:			
Balance at beginning of year	(66,587)	(32,742)	(5,728)
Foreign currency translation adjustments	(20,381)	(34,111)	(27,014)
Foreign currency translation adjustments attributable to noncontrolling interests	68	266	—
Balance at end of year	(86,900)	(66,587)	(32,742)
Balance at end of year	(114,541)	(16,502)	128,856
Common shares held in treasury, at cost			
Balance at beginning of year	(1,941,904)	(1,562,019)	(1,094,704)
Shares repurchased for treasury	(92,666)	(379,885)	(467,315)
Balance at end of year	(2,034,570)	(1,941,904)	(1,562,019)
Total shareholders' equity available to Arch	8,253,718	6,166,542	6,091,714
Non-redeemable noncontrolling interests	851,854	738,831	769,081
Total shareholders' equity	<u>\$ 9,105,572</u>	<u>\$ 6,905,373</u>	<u>\$ 6,860,795</u>

(1) See Note 1, "General," for details.

See Notes to Consolidated Financial Statements

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(U.S. dollars in thousands)

	Year Ended December 31,		
	2016	2015	2014
Operating Activities			
Net income	\$ 824,178	\$ 526,582	\$ 821,260
Adjustments to reconcile net income to net cash provided by operating activities:			
Net realized losses (gains)	(178,507)	149,961	(127,511)
Net impairment losses recognized in earnings	30,442	20,116	30,150
Equity in net income or loss of investment funds accounted for using the equity method and other income or loss	5,644	3,857	13,340
Share-based compensation	56,581	56,096	54,789
Changes in:			
Reserve for losses and loss adjustment expenses, net of unpaid losses and loss adjustment expenses recoverable	372,244	181,658	156,211
Unearned premiums, net of ceded unearned premiums	146,569	83,626	298,190
Premiums receivable	(71,613)	(26,783)	(217,035)
Deferred acquisition costs	(38,597)	(29,008)	(81,584)
Reinsurance balances payable	31,542	(5,885)	26,699
Other liabilities	222,069	45,223	101,757
Other items	(3,908)	(7,537)	(39,136)
Net Cash Provided By Operating Activities	1,396,644	997,906	1,037,130
Investing Activities			
Purchases of fixed maturity investments	(35,532,810)	(29,451,873)	(28,745,279)
Purchases of equity securities	(665,702)	(515,413)	(520,817)
Purchases of other investments	(1,389,406)	(1,749,525)	(1,590,648)
Proceeds from sales of fixed maturity investments	34,559,966	28,094,047	26,823,189
Proceeds from sales of equity securities	751,728	564,011	411,362
Proceeds from sales, redemptions and maturities of other investments	1,149,328	1,250,883	941,798
Proceeds from redemptions and maturities of fixed maturity investments	755,007	748,529	762,995
Net settlements of derivative instruments	(17,068)	(5,056)	34,372
Proceeds from investment in joint venture	—	40,000	—
Net sales (purchases) of short-term investments	(123,410)	169,095	577,126
Change in cash collateral related to securities lending	(155,248)	(6,662)	57,470
Acquisitions, net of cash	(1,992,720)	818	(237,106)
Purchases of fixed assets	(15,303)	(15,736)	(19,883)
Change in other assets	(45,905)	(36,993)	—
Net Cash Used For Investing Activities	(2,721,543)	(913,875)	(1,505,421)
Financing Activities			
Proceeds from issuance of preferred shares, net	434,899	—	—
Purchases of common shares under share repurchase program	(75,256)	(365,383)	(454,137)
Proceeds from common shares issued, net	(2,418)	4,861	6,827
Proceeds from borrowings	1,386,741	431,362	—
Repayments of borrowings	(219,171)	—	—
Change in cash collateral related to securities lending	155,248	6,662	(57,470)
Third party investment in non-redeemable noncontrolling interests	—	—	796,903
Third party investment in redeemable noncontrolling interests	—	—	219,233
Dividends paid to redeemable noncontrolling interests	(17,989)	(18,307)	(14,448)
Other	1,685	(41,913)	64,973
Preferred dividends paid	(28,070)	(21,938)	(21,938)
Net Cash Provided By (Used For) Financing Activities	1,635,669	(4,656)	539,943
Effects of exchange rate changes on foreign currency cash	(21,154)	(11,751)	(20,007)
Increase in cash	289,616	67,624	51,645
Cash beginning of year	553,326	485,702	434,057
Cash end of year	\$ 842,942	\$ 553,326	\$ 485,702
Income taxes paid	\$ 50,621	\$ 40,273	\$ 20,923
Interest paid	\$ 63,288	\$ 52,728	\$ 46,429
Non-cash consideration paid in convertible non-voting common equivalent preferred shares	\$ 1,101,304	\$ —	\$ —

See Notes to Consolidated Financial Statements

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. General

Arch Capital Group Ltd. (“ACGL”) is a Bermuda public limited liability company which provides insurance and reinsurance on a worldwide basis through its wholly owned subsidiaries. ACGL was formed in September 2000 and became the sole shareholder of Arch Capital Group (U.S.) Inc. (“Arch-U.S.”) pursuant to an internal reorganization transaction completed in November 2000. In October 2001, ACGL launched an underwriting initiative to meet current and future demand in the global insurance and reinsurance markets that included the recruitment of new management teams and an equity capital infusion of \$763.2 million.

As used herein, the “Company” means ACGL and its subsidiaries. Similarly, “Common Shares” means the common shares, par value \$0.0033, of ACGL. The Company’s consolidated financial statements include the results of Watford Holdings Ltd., and its wholly owned subsidiaries (“Watford Re”). See Note 4.

The Company has reclassified the presentation of certain prior year information to conform to the current presentation. Such reclassifications had no effect on the Company’s net income, shareholders’ equity or cash flows. Tabular amounts are in U.S. Dollars in thousands, except share amounts, unless otherwise noted.

Change in Accounting

Deferred Acquisition Costs. In the 2016 fourth quarter, the Company adopted a change in accounting principle related to the capitalization of certain components of acquisition-related costs. Under the new method, the Company’s insurance and reinsurance operations will only capitalize incremental direct external costs that result from acquiring a contract (*i.e.*, commissions and premium taxes) and will not capitalize certain salaries, benefits and other internal underwriting costs. Historically, the Company capitalized both types of costs for its insurance and reinsurance operations. For the Company’s mortgage insurance operations, which include a substantial direct sales force, both external and internal direct costs will continue to be capitalized.

The Company believes that this change in accounting principle is preferable as it will allow for consistency with peer insurance and reinsurance companies, which the Company believes do not capitalize certain salaries, benefits and other internal underwriting costs. We have retrospectively applied this change in accounting principle to all prior periods. As of January 1, 2014, the cumulative effect of the change resulted in a decrease of \$38.3 million in retained earnings with a \$50.6 million reduction in deferred acquisition costs and a \$12.3 million increase in other assets related to deferred taxes. As of December 31, 2015, this resulted in a \$57.3 million reduction

in deferred acquisition costs and a \$14.1 million increase in other assets related to deferred taxes. As the impact to the consolidated statements of income for the annual and quarterly periods from January 1, 2014 through September 30, 2016 was not material, the consolidated balance sheet for December 31, 2015 was amended to reflect the January 1, 2014 impact while the consolidated statements of income were not amended to reflect this change in accounting principle. Instead, the Company recorded an out-of-period charge in other operating expenses of \$9.4 million and \$6.6 million in the 2016 fourth quarter (unaudited) and year ended December 31, 2016, respectively, or \$0.07 and \$0.05 on a quarterly (unaudited) and annual diluted earnings per share basis, respectively. This item had no impact on cash provided by (used for) operating, investing or financing activities.

2. Business Acquired

United Guaranty Corporation

On December 31, 2016, the Company’s U.S.-based subsidiaries completed the acquisition of all of the issued and outstanding shares of capital stock of United Guaranty Corporation, a North Carolina corporation (“UGC”) pursuant to the Stock Purchase Agreement with American International Group, Inc. (“AIG”) entered into on August 15, 2016 (“Stock Purchase Agreement”). The acquisition under the Stock Purchase Agreement is referred to herein as the “UGC acquisition.”

The UGC acquisition expanded the scale of the Company’s existing mortgage insurance business by combining UGC’s position as the market leader in the U.S. private mortgage insurance industry with the Company’s financial strength and history of innovation.

The aggregate purchase price paid by the Company was \$3.26 billion, consisting of cash consideration of \$2.16 billion and convertible non-voting common equivalent preferred shares of ACGL with a fair value of \$1.1 billion. In connection with the UGC acquisition, the 50% quota share reinsurance agreement between United Guaranty Residential Insurance Company (“UGRIC”) and three subsidiaries of AIG relating to policy years 2014, 2015 and 2016 was amended to terminate on a run-off basis as of 12:01 a.m. on January 1, 2017.

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table summarizes the fair value of net assets acquired and allocation of purchase price, measured as of the acquisition date:

	<u>Total</u>	<u>Useful Life</u>
Purchase price		
Cash paid	\$ 2,159,524	
Convertible non-voting common equivalent preferred shares (1)	1,101,304	
Total purchase price (a)	<u>\$ 3,260,828</u>	
Assets acquired		
Cash	\$ 187,715	
Investments, at fair value	3,404,267	
Accrued investment income	33,770	
Premiums receivable	34,545	
Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses	27,280	
Ceded unearned premiums	302,090	
Intangible asset -- acquired insurance contracts	350,000	9 years
Intangible asset -- distribution relationships	115,000	20 years
Intangible asset -- operating platform	15,000	5 years
Intangible asset -- insurance licenses	27,000	Indefinite
Other assets acquired	133,222	
Total assets acquired	<u>4,629,889</u>	
Liabilities acquired		
Reserves for losses and loss adjustment expenses	\$ 577,268	
Unearned premiums	837,175	
Reinsurance balances payable	49,295	
Other liabilities acquired	94,081	
Total liabilities acquired	<u>1,557,819</u>	
Net assets acquired (b)	<u>\$ 3,072,070</u>	
Goodwill (a)-(b)	<u>\$ 188,758</u>	

(1) Based upon a formula set forth in the Stock Purchase Agreement, AIG received 1,276,282 of ACGL's convertible non-voting common equivalent preferred shares, each of which is convertible into 10 shares of ACGL fully paid non-assessable common stock. The Company has determined that, based on a review of the terms, features and rights of the Company's non-voting common equivalent preferred shares compared to the rights of the Company's common shareholders, the underlying 12,762,820 common shares that the convertible securities convert to were common share equivalents at the time of their issuance. See Note 19 for further details.

UGC, based in Greensboro, North Carolina, operates its U.S. business through its primary operating subsidiaries, UGRIC, which is licensed and operates in all 50 states, the District of Columbia and Puerto Rico, and United Guaranty Mortgage Indemnity Company ("UGMIC"), which is licensed in 48 states and the District of Columbia.

The Company recognized goodwill of \$188.8 million that is primarily attributed to UGC's assembled workforce, access to the mortgage insurance market and additional synergies to be realized in the future. Under U.S. tax principles, the UGC

acquisition was structured as a deemed asset acquisition under Internal Revenue Code Section 338(h)(10). As an asset acquisition, the tax bases in the acquired assets were adjusted to fair market value. Any remaining purchase price was allocated to intangible assets and goodwill, which are amortizable over 15 years. The Company estimated that \$126.9 million of goodwill along with each of the identified intangible assets was expected to be deductible for tax purposes at December 31, 2016. The Company includes the operations of UGC in its mortgage segment (see Note 5).

Supplemental Pro Forma Information

The following table presents unaudited pro forma consolidated information for the years ended December 31, 2016 and 2015 and assumes the UGC acquisition occurred on January 1, 2015. The pro forma financial information is presented for informational purposes only and does not necessarily reflect the results that would have occurred had the acquisition taken place on January 1, 2015, nor is it necessarily indicative of future results. Significant adjustments used to determine the pro forma results below include amortization of intangible assets and financing adjustments related to the Company's issuance of senior notes, revolving credit agreement borrowings and preferred shares, and the corresponding income tax effects. Non-recurring transaction costs have been included in the unaudited pro forma results in the 2015 period.

	Unaudited Pro Forma Year Ended December 31,	
	2016	2015
Total revenues	\$ 5,311,729	\$ 4,840,084
Net income available to Arch common shareholders	\$ 913,882	\$ 718,463
Net income per common share and common share equivalent		
Basic	\$6.84	\$5.34
Diluted	\$6.65	\$5.18

Gulf Re Holdings Limited

In May 2008, the Company provided \$100.0 million of funding to Gulf Reinsurance Limited, a wholly owned subsidiary of Gulf Re Holdings Limited (collectively, "Gulf Re"), pursuant to the joint venture agreement with Gulf Investment Corporation GSC ("GIC"). Under the agreement, Arch Re Bermuda and GIC each owned 50% of Gulf Re. The Company entered into a number of strategic initiatives related to Gulf Re in the 2014 fourth quarter, including an agreement to acquire complete ownership and effective control of Gulf Re. Such agreement was approved by the Dubai Financial Services Authority in April 2015 and the transaction closed on May 14, 2015. Pursuant to the agreement, Gulf Re distributed \$130.6 million in total to the Company and GIC, and Gulf Re maintained \$50.7 million of equity capital. The Company purchased GIC's remaining investment in Gulf Re for \$25.6

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

million through a transfer of fixed maturity investments. GIC continues to participate equally with the Company in the financial results of Gulf Re and have the ability to purchase shares in Gulf Re over seven years. The acquisition resulted in no goodwill or other intangible assets as the fair value of Gulf Re was equal to its book value at closing.

3. Significant Accounting Policies

(a) Basis of Presentation

The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP") and include the accounts of ACG and its subsidiaries, including Arch Re Bermuda, Arch Reinsurance Company ("Arch Re U.S."), Arch-U.S., Arch Insurance Company, Arch Specialty Insurance Company, Arch Excess & Surplus Insurance Company, Arch Indemnity Insurance Company, Arch Insurance Canada Ltd. ("Arch Insurance Canada"), Alternative Re Limited, Arch Reinsurance Europe Underwriting Designated Activity Company ("Arch Re Europe"), Arch Mortgage Insurance Company ("AMIC"), Arch Mortgage Guaranty Company, UGRIC, UGMIC, Arch Mortgage Insurance Designated Activity Company ("Arch MI Europe"), Arch Insurance Company (Europe) Limited ("Arch Insurance Company Europe"), Lloyd's of London syndicate 2012 and related companies ("Arch Syndicate 2012"), Gulf Re and Watford Re. All significant intercompany transactions and balances have been eliminated in consolidation. 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 disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates and assumptions.

(b) Premium Revenues and Related Expenses

Insurance. Insurance premiums written are generally recorded at the policy inception and are primarily earned on a pro rata basis over the terms of the policies for all products, usually 12 months. Premiums written include estimates in the Company's programs, specialty lines, lenders products business and for participation in involuntary pools. Such premium estimates are derived from multiple sources which include the historical experience of the underlying business, similar business and available industry information. Unearned premium reserves represent the portion of premiums written that relates to the unexpired terms of in-force insurance policies.

Reinsurance. Reinsurance premiums written include amounts reported by brokers and ceding companies, supplemented by the Company's own estimates of premiums where reports have not been received. The determination of premium estimates

requires a review of the Company's experience with the ceding companies, familiarity with each market, the timing of the reported information, an analysis and understanding of the characteristics of each line of business, and management's judgment of the impact of various factors, including premium or loss trends, on the volume of business written and ceded to the Company. On an ongoing basis, the Company's underwriters review the amounts reported by these third parties for reasonableness based on their experience and knowledge of the subject class of business, taking into account the Company's historical experience with the brokers or ceding companies. In addition, reinsurance contracts under which the Company assumes business generally contain specific provisions which allow the Company to perform audits of the ceding company to ensure compliance with the terms and conditions of the contract, including accurate and timely reporting of information. Based on a review of all available information, management establishes premium estimates where reports have not been received. Premium estimates are updated when new information is received and differences between such estimates and actual amounts are recorded in the period in which estimates are changed or the actual amounts are determined.

Reinsurance premiums written are recorded based on the type of contracts the Company writes. Premiums on the Company's excess of loss and pro rata reinsurance contracts are estimated when the business is underwritten. For excess of loss contracts, premiums are recorded as written based on the terms of the contract. Estimates of premiums written under pro rata contracts are recorded in the period in which the underlying risks are expected to incept and are based on information provided by the brokers and the ceding companies. For multi-year reinsurance treaties which are payable in annual installments, generally, only the initial annual installment is included as premiums written at policy inception due to the ability of the reinsured to commute or cancel coverage during the term of the policy. The remaining annual installments are included as premiums written at each successive anniversary date within the multi-year term.

Reinstatement premiums for the Company's insurance and reinsurance operations are recognized at the time a loss event occurs, where coverage limits for the remaining life of the contract are reinstated under pre-defined contract terms. Reinstatement premiums, if obligatory, are fully earned when recognized. The accrual of reinstatement premiums is based on an estimate of losses and loss adjustment expenses, which reflects management's judgment.

Premium estimates are reviewed by management at least quarterly. Such review includes a comparison of actual reported premiums to expected ultimate premiums along with a review of the aging and collection of premium estimates. Based on management's review, the appropriateness of the premium estimates is evaluated, and any adjustment to these estimates is recorded in the period in which it becomes known. Adjustments

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to premium estimates could be material and such adjustments could directly and significantly impact earnings favorably or unfavorably in the period they are determined because the estimated premium may be fully or substantially earned. A significant portion of amounts included as premiums receivable, which represent estimated premiums written, net of commissions, are not currently due based on the terms of the underlying contracts.

Reinsurance premiums written, irrespective of the class of business, are generally earned on a pro rata basis over the terms of the underlying policies or reinsurance contracts. Contracts and policies written on a “losses occurring” basis cover claims that may occur during the term of the contract or policy, which is typically 12 months. Accordingly, the premium is earned evenly over the term. Contracts which are written on a “risks attaching” basis cover claims which attach to the underlying insurance policies written during the terms of such contracts. Premiums earned on such contracts usually extend beyond the original term of the reinsurance contract, typically resulting in recognition of premiums earned over a 24-month period. Certain of the Company’s reinsurance contracts include provisions that adjust premiums or acquisition expenses based upon the experience under the contracts. Premiums written and earned, as well as related acquisition expenses, are recorded based upon the projected experience under such contracts.

The Company also writes certain reinsurance business that is intended to provide insurers with risk management solutions that complement traditional reinsurance. Under these contracts, the Company assumes a measured amount of insurance risk in exchange for an anticipated margin, which is typically lower than on traditional reinsurance contracts. The terms and conditions of these contracts may include additional or return premiums based on loss experience, loss corridors, sublimits and caps. Examples of such business include aggregate stop-loss coverages, financial quota share coverages and multi-year retrospectively rated excess of loss coverages. If these contracts are deemed to transfer risk, they are accounted for as reinsurance. Otherwise, such contracts are accounted for under the deposit method.

Mortgage. Mortgage guaranty insurance policies are contracts that are generally non-cancelable by the insurer, are renewable at a fixed price, and provide for payment of premiums on a monthly, annual or single basis. Upon renewal, the Company is not able to re-underwrite or re-price its policies. Consistent with industry accounting practices, premiums written on a monthly basis are earned as coverage is provided. Premiums written on an annual basis are amortized on a monthly pro rata basis over the year of coverage. Primary mortgage insurance premiums written on policies covering more than one year are referred to as single premiums. A portion of the revenue from single premiums is recognized in premiums earned in the current period, and the remaining portion is deferred as unearned premiums and earned over the estimated expiration

of risk of the policy. If single premium policies related to insured loans are canceled due to repayment by the borrower and the policy is a non-refundable product, the remaining unearned premium related to each canceled policy is recognized as earned premium upon notification of the cancellation.

Unearned premiums represent the portion of premiums written that is applicable to the estimated unexpired risk of insured loans. A portion of premium payments may be refundable if the insured cancels coverage, which generally occurs when the loan is repaid, the loan amortizes to a sufficiently low amount to trigger a lender permitted or legally required cancellation, or the value of the property has increased sufficiently in accordance with the terms of the contract. Premium refunds reduce premiums earned in the consolidated statements of income. Generally, only unearned premiums are refundable. However, when the Company pays a claim on a delinquent loan, all servicer paid premiums received on the delinquent loan covering any period after the default date will be refunded, in accordance with the terms of the contract.

Acquisition Costs. Acquisition costs that are directly related and incremental to the successful acquisition or renewal of business are deferred and amortized based on the type of contract. The Company’s insurance and reinsurance operations capitalize incremental direct external costs that result from acquiring a contract but do not capitalize salaries, benefits and other internal underwriting costs. For the Company’s mortgage insurance operations, which include a substantial direct sales force, both external and certain internal direct costs are deferred and amortized. For property and casualty insurance and reinsurance contracts, deferred acquisition costs are amortized over the period in which the related premiums are earned. Consistent with mortgage insurance industry accounting practice, amortization of acquisition costs related to the mortgage insurance contracts for each underwriting year’s book of business is recorded in proportion to estimated gross profits. Estimated gross profits are comprised of earned premiums and losses and loss adjustment expenses. For each underwriting year, the Company estimates the rate of amortization to reflect actual experience and any changes to persistency or loss development.

Deferred acquisition costs are carried at their estimated realizable value and take into account anticipated losses and loss adjustment expenses, based on historical and current experience, and anticipated investment income.

A premium deficiency occurs if the sum of anticipated losses and loss adjustment expenses, unamortized acquisition costs and maintenance costs exceed unearned premiums (including expected future premiums) and anticipated investment income. A premium deficiency reserve (“PDR”) is recorded by charging any unamortized acquisition costs to expense to the extent required in order to eliminate the deficiency. If the premium

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deficiency exceeds unamortized acquisition costs then a liability is accrued for the excess deficiency.

To assess the need for a PDR on mortgage exposures, the Company develops loss projections based on modeled loan defaults related to its current policies in force. This projection is based on recent trends in default experience, severity and rates of defaulted loans moving to claim, as well as recent trends in the rate at which loans are prepaid. Evaluating the expected profitability of the Company's existing mortgage insurance business and the need for a PDR for its mortgage business involves significant reliance upon assumptions and estimates with regard to the likelihood, magnitude and timing of potential losses and premium revenues.

No premium deficiency charges were recorded by the Company during 2016, 2015 or 2014.

(c) Deposit Accounting

Certain assumed reinsurance contracts that are deemed not to transfer insurance risk, are accounted for using the deposit method of accounting. However, it is possible that the Company could incur financial losses on such contracts. Management exercises significant judgment in the assumptions used in determining whether assumed contracts should be accounted for as reinsurance contracts or deposit contracts. For those contracts that contain only significant underwriting risk, the estimated profit margin is deferred and amortized over the contract period and such amount is included in the Company's underwriting results. When the estimated profit margin is explicit, the margin is reflected as other underwriting income and any adverse financial results on such contracts are reflected as incurred losses. When the estimated profit margin is implicit, the margin is reflected as an offset to paid losses and any adverse financial results on such contracts are reflected as incurred losses. Additional judgments are required when applying the accounting guidance with respect to the revenue recognition criteria for contracts deemed to transfer only significant underwriting risk. For those contracts that contain only significant timing risk, an accretion rate is established at inception of the contract based on actuarial estimates whereby the deposit accounting liability is increased to the estimated amount payable over the contract term. The accretion on the deposit is based on the expected rate of return required to fund the expected future payment obligations. Periodically the Company reassesses the estimated ultimate liability and the related expected rate of return. The accretion of the deposit accounting liability as well as changes to the estimated ultimate liability and the accretion rate would be reflected as part of interest expense in the Company's results of operations. Any negative accretion in a deposit accounting liability is shown in other underwriting income in the Company's results of operations.

Deposit accounting liabilities totaled \$22.2 million and \$260.4 million, respectively, at December 31, 2016 and 2015. Under some of these contracts, the ceding company retains the related assets on a funds-held basis. Such amounts are included in "Other assets" on the Company's balance sheet. Interest income produced by those assets are recorded as part of net investment income in the Company's results of operations.

(d) Retroactive Accounting

Retroactive reinsurance reimburses a ceding company for liabilities incurred as a result of past insurable events covered by the underlying policies reinsured. In certain instances, reinsurance contracts cover losses both on a prospective basis and on a retroactive basis and, accordingly, the Company bifurcates the prospective and retrospective elements of these reinsurance contracts and accounts for each element separately where practical. Underwriting income generated in connection with retroactive reinsurance contracts is deferred and amortized into income over the settlement period while losses are charged to income immediately. Subsequent changes in estimated or actual cash flows under such retroactive reinsurance contracts are accounted for by adjusting the previously deferred amount to the balance that would have existed had the revised estimate been available at the inception of the reinsurance transaction, with a corresponding charge or credit to income.

(e) Reinsurance Ceded

In the normal course of business, the Company purchases reinsurance to increase capacity and to limit the impact of individual losses and events on its underwriting results by reinsuring certain levels of risk with other insurance enterprises or reinsurers. The Company uses pro rata, excess of loss and facultative reinsurance contracts. Reinsurance ceding commissions that represent a recovery of acquisition costs are recognized as a reduction to acquisition costs while the remaining portion is deferred. The accompanying consolidated statement of income reflects premiums and losses and loss adjustment expenses and acquisition costs, net of reinsurance ceded. See Note 8 for information on the Company's reinsurance usage. Reinsurance premiums ceded and unpaid losses and loss adjustment expenses recoverable are estimated in a manner consistent with that of the original policies issued and the terms of the reinsurance contracts. If the reinsurers are unable to satisfy their obligations under the agreements, the Company's insurance or reinsurance subsidiaries would be liable for such defaulted amounts.

(f) Cash

Cash includes cash equivalents, which are investments with original maturities of three months or less that are not managed by external or internal investment advisors.

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(g) Investments

The Company currently classifies substantially all of its fixed maturity investments, equity securities and short-term investments as “available for sale” and, accordingly, they are carried at estimated fair value (also known as fair value) with the changes in fair value recorded as an unrealized gain or loss component of accumulated other comprehensive income in shareholders’ equity. The fair value of fixed maturity securities and equity securities is generally determined from quotations received from nationally recognized pricing services, or when such prices are not available, by reference to broker or underwriter bid indications. Short-term investments comprise securities due to mature within one year of the date of issue. Short-term investments include certain cash equivalents which are part of investment portfolios under the management of external and internal investment managers.

The Company participates in a securities lending program as a mechanism for generating additional interest income on its fixed income portfolio. Under the security lending agreements, certain of its fixed income portfolio securities are loaned to third parties, primarily major brokerage firms, for short periods of time through a lending agent. Such securities have been reclassified as “Fixed maturities and short-term investments pledged under securities lending agreements, at fair value.” The Company maintains legal control over the securities it lends, retains the earnings and cash flows associated with the loaned securities and receives a fee from the borrower for the temporary use of the securities. Collateral received is required at a rate of 102% or greater of the fair value of the loaned securities including accrued investment income and is monitored and maintained by the lending agent. Such collateral is reflected as “Collateral received under securities lending agreements, at fair value.”

The Company’s investment portfolio includes certain funds that, due to their ownership structure, are accounted for by the Company using the equity method. In applying the equity method, these investments are initially recorded at cost and are subsequently adjusted based on the Company’s proportionate share of the net income or loss of the funds (which include changes in the fair value of the underlying securities in the funds). Such investments are generally recorded on a one to three month lag based on the availability of reports from the investment funds. Changes in the carrying value of such investments are recorded in net income as “Equity in net income (loss) of investment funds accounted for using the equity method.” As such, fluctuations in the carrying value of the investment funds accounted for using the equity method may increase the volatility of the Company’s reported results of operations.

Other investments include funds and separately managed accounts with holdings in Asian and emerging markets, fixed maturities, term loans and other investment strategies. The fair

value for certain of the Company’s other investments are determined using net asset values (“NAVs”) as advised by external fund managers. The NAV is based on the fund manager’s valuation of the underlying holdings in accordance with the fund’s governing documents. Certain of the funds are accounted for as available for sale equity securities, regardless of the nature of the investments held within the fund.

The Company elected to carry certain fixed maturity securities, equity securities and other investments at fair value under the fair value option afforded by accounting guidance regarding the fair value option for financial assets and liabilities. Changes in fair value of investments accounted for using the fair value option are included in “Net realized gains (losses).” The primary reasons for electing the fair value option were to address simplification and cost-benefit considerations.

The Company invests in limited partner interests and shares of limited liability companies. Such amounts are included in investments accounted for using the equity method, other investments available for sale and investments accounted for using the fair value option. These investments can often have characteristics of a variable interest entity (“VIE”). A VIE refers to entities that have characteristics such as (i) insufficient equity at risk to allow the entity to finance its activities without additional financial support or (ii) instances where the equity investors, as a group, do not have the characteristic of a controlling financial interest. If the Company is determined to be the primary beneficiary, it is required to consolidate the VIE. The primary beneficiary is defined as the variable interest holder that is determined to have the controlling financial interest as a result of having both (i) the power to direct the activities of a VIE that most significantly impact the economic performance of the VIE and (ii) the obligation to absorb losses or right to receive benefits from the VIE that could potentially be significant to the VIE. At inception of the VIE as well as on an ongoing basis, the Company determines whether it is the primary beneficiary based on an analysis of the Company’s level of involvement in the VIE, the contractual terms, and the overall structure of the VIE. The Company’s maximum exposure to loss with respect to these investments is limited to the investment carrying amounts reported in the Company’s consolidated balance sheet and any unfunded commitment.

The Company performs quarterly reviews of its investments to determine whether declines in fair value below the cost basis are considered other-than-temporary in accordance with applicable accounting guidance regarding the recognition and presentation of other-than-temporary impairments (“OTTI”). The process of determining whether a security is other-than-temporarily impaired requires judgment and involves analyzing many factors. These factors include (i) an analysis of the liquidity, business prospects and overall financial condition of the issuer, (ii) the time period in which there was a significant decline in value, (iii) the significance of the decline and (iv) the analysis of specific credit events. The Company evaluates the

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unrealized losses of its equity securities by issuer and forecasts a reasonable period of time by which the fair value of the securities would increase and the Company would recover its cost. If the Company is unable to forecast a reasonable period of time in which to recover the cost of its equity securities, a net impairment loss in earnings equivalent to the entire unrealized loss is recognized.

When there are credit-related losses associated with debt securities for which the Company does not have an intent to sell and it is more likely than not that it will not be required to sell the security before recovery of its cost basis, the amount of the OTTI related to a credit loss is recognized in earnings and the amount of the OTTI related to other factors (e.g., interest rates, market conditions, etc.) is recorded as a component of other comprehensive income (loss). The amount of the credit loss of an impaired debt security is the difference between the amortized cost and the greater of (i) the present value of expected future cash flows and (ii) the fair value of the security. In instances where no credit loss exists but it is more likely than not that the Company will have to sell the debt security prior to the anticipated recovery, the decline in fair value below amortized cost is recognized as an OTTI in earnings. In periods after the recognition of an OTTI on debt securities, the Company accounts for such securities as if they had been purchased on the measurement date of the OTTI at an amortized cost basis equal to the previous amortized cost basis less the OTTI recognized in earnings. For debt securities for which OTTI were recognized in earnings, the difference between the new amortized cost basis and the cash flows expected to be collected will be accreted or amortized into net investment income. See Note 9, "Investment Information—Other-Than-Temporary Impairments" for additional information.

Net investment income includes interest and dividend income together with amortization of market premiums and discounts and is net of investment management and custody fees. Anticipated prepayments and expected maturities are used in applying the interest method for certain investments such as mortgage and other asset-backed securities. When actual prepayments differ significantly from anticipated prepayments, the effective yield is recalculated to reflect actual payments to date and anticipated future payments. The net investment in such securities is adjusted to the amount that would have existed had the new effective yield been applied since the acquisition of the security. Such adjustments, if any, are included in net investment income when determined.

Investment gains or losses realized on the sale of investments, except for certain fund investments, are determined on a first-in, first-out basis and are reflected in net income. Investment gains or losses realized on the sale of certain fund investments are determined on an average cost basis. Unrealized appreciation or decline in the value of available for sale securities, which are carried at fair value, is excluded from net income and recorded as a separate component of accumulated

other comprehensive income, net of applicable deferred income tax.

(h) Derivative Instruments

The Company recognizes all derivative instruments, including embedded derivative instruments, at fair value in its consolidated balance sheets. The Company employs the use of derivative instruments within its operations to mitigate risks arising from assets and liabilities held in foreign currencies as well as part of its overall investment strategy. For such instruments, changes in assets and liabilities measured at fair value are recorded as "Net realized gains" in the consolidated statements of income. In addition, the Company's derivative instruments include amounts related to underwriting activities where an insurance or reinsurance contract meets the accounting definition of a derivative instrument. For such contracts, changes in fair value are reflected in "Other underwriting income" in the consolidated statements of income as the underlying contract originates from the Company's underwriting operations. For the periods ended 2016, 2015, and 2014, the Company did not designate any derivative instruments as hedges under the relevant accounting guidance. See Note 11 for information on the Company's derivative instruments.

(i) Reserves for Losses and Loss Adjustment Expenses

Insurance and Reinsurance. The reserve for losses and loss adjustment expenses consists of estimates of unpaid reported losses and loss adjustment expenses and estimates for losses incurred but not reported. The reserve for unpaid reported losses and loss adjustment expenses, established by management based on reports from ceding companies and claims from insureds, excludes estimates of amounts related to losses under high deductible policies, and represents the estimated ultimate cost of events or conditions that have been reported to or specifically identified by the Company. Such reserves are supplemented by management's estimates of reserves for losses incurred for which reports or claims have not been received. The Company's reserves are based on a combination of reserving methods, incorporating both Company and industry loss development patterns. The Company selects the initial expected loss and loss adjustment expense ratios based on information derived by its underwriters and actuaries during the initial pricing of the business, supplemented by industry data where appropriate. Such ratios consider, among other things, rate changes and changes in terms and conditions that have been observed in the market. These estimates are reviewed regularly and, as experience develops and new information becomes known, the reserves are adjusted as necessary. Such adjustments, if any, are reflected in income in the period in which they are determined. As actual loss information has been reported, the Company has developed its own loss experience and its reserving methods include other actuarial techniques. Over time, such techniques have been given further weight in

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its reserving process based on the continuing maturation of the Company's reserves. Inherent in the estimates of ultimate losses and loss adjustment expenses are expected trends in claims severity and frequency and other factors which may vary significantly as claims are settled. Accordingly, ultimate losses and loss adjustment expenses may differ materially from the amounts recorded in the accompanying consolidated financial statements. Losses and loss adjustment expenses are recorded on an undiscounted basis, except for excess workers' compensation and employers' liability business written by the Company's insurance operations.

Mortgage. The reserves for mortgage guaranty insurance losses and loss adjustment expenses are the estimated claim settlement costs on notices of default that have been received by the Company, as well as loan defaults that have been incurred but have not been reported by the lenders. Consistent with primary mortgage insurance industry accounting practice, the Company does not establish loss reserves for future claims on insured loans that are not currently in default (defined as two consecutive missed payments). The Company establishes loss reserves on a case-by-case basis when insured loans are identified as currently in default using estimated claim rates and average claim sizes for each report year, net of any salvage recoverable. The Company also reserves for defaults that have occurred but have not yet been reported to the Company prior to the close of an accounting period. To determine this reserve, the Company estimates the number of defaults not yet reported using historical information regarding late reported delinquencies and applies estimated claim rates and claim sizes for the estimated defaults not yet reported.

The establishment of reserves across the Company's segments is an inherently uncertain process, are necessarily based on estimates, and the ultimate net cost may vary from such estimates. The methods for making such estimates and for establishing the resulting liability are reviewed and updated using the most current information available. Any resulting adjustments, which may be material, are reflected in current operations.

(j) Contractholder Receivables and Payables and Collateral Held for Insured Obligations

Certain insurance policies written by the Company's insurance operations feature large deductibles, primarily in its construction and national accounts lines of business. Under such contracts, the Company is obligated to pay the claimant for the full amount of the claim. The Company is subsequently reimbursed by the policyholder for the deductible amount. These amounts are included on a gross basis in the consolidated balance sheet in contractholder payables and contractholder receivables, respectively. In the event that the Company is unable to collect from the policyholder, the Company would be liable for such defaulted amounts. Collateral, primarily in the form of letters of credit, cash and trusts, is obtained from the

policyholder to mitigate the Company's credit risk. In the instances where the company receives collateral in the form of cash, the company reflects it in "Collateral held for insured obligations."

(k) Foreign Exchange

Assets and liabilities of foreign operations whose functional currency is not the U.S. Dollar are translated at the prevailing exchange rates at each balance sheet date. Revenues and expenses of such foreign operations are translated at average exchange rates during the year. The net effect of the translation adjustments for foreign operations is included in accumulated other comprehensive income, net of applicable deferred income tax. Monetary assets and liabilities, such as premiums receivable and the reserve for losses and loss adjustment expenses, denominated in foreign currencies are revalued at the exchange rate in effect at the balance sheet date with the resulting foreign exchange gains and losses included in net income. Accounts that are classified as non-monetary, such as deferred acquisition costs and the unearned premium reserves, are not revalued. In the case of foreign currency denominated fixed maturity securities which are classified as "available for sale," the change in exchange rates between the local currency in which the investments are denominated and the Company's functional currency at each balance sheet date is included in unrealized appreciation or decline in value of securities, a component of accumulated other comprehensive income, net of applicable deferred income tax.

(l) Income Taxes

Deferred income taxes reflect the expected future tax consequences of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and amounts used for income tax purposes. A valuation allowance is recorded if it is more likely than not that some or all of a deferred tax asset may not be realized. The Company considers future taxable income and feasible tax planning strategies in assessing the need for a valuation allowance. In the event the Company determines that it will not be able to realize all or part of its deferred income tax assets in the future, an adjustment to the deferred income tax assets would be charged to income in the period in which such determination is made. In addition, if the Company subsequently assesses that the valuation allowance is no longer needed, a benefit would be recorded to income in the period in which such determination is made. See Note 14 for more information.

The Company recognizes a tax benefit where it concludes that it is more likely than not that the tax benefit will be sustained on audit by the taxing authority based solely on the technical merits of the associated tax position. If the recognition threshold is met, the Company recognizes a tax benefit measured at the largest amount of the tax benefit that, in the Company's judgment, is greater than 50% likely to be realized. The

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Company records interest and penalties related to unrecognized tax benefits in the provision for income taxes.

(m) Share-Based Payment Arrangements

The Company applies a fair value based measurement method in accounting for its share-based payment arrangements with eligible employees and directors. Compensation expense is estimated based on the fair value of the award at the grant date and is recognized in net income over the requisite service period with a corresponding increase in shareholders' equity. No value is attributed to awards that employees forfeit because they fail to satisfy vesting conditions. As such, the number of shares granted is reduced by assumed forfeitures and adjusted based on actual forfeitures until vesting. The Company's share-based payment arrangements generally vest over a three year period with one-third vesting on the first, second and third anniversaries of the grant date. The share-based compensation expense associated with such awards that have graded vesting features and vest based on service conditions only is calculated on a straight-line basis over the requisite service period for the entire award. For awards granted to retirement-eligible employees where no service is required for the employee to retain the award, the grant date fair value is immediately recognized as compensation expense at the grant date because the employee is able to retain the award without continuing to provide service. For employees near retirement eligibility, attribution of compensation cost is over the period from the grant date to the retirement eligibility date. In November 2012, the Company issued off-cycle share-based awards, which will cliff vest on the fifth anniversary of the grant date. The expense for such grant is being amortized on a straight-line basis over the five-year requisite service period. The off-cycle awards have similar terms as the annual award agreements, however with respect to retirement eligible employees service is required for the employee to retain the award. Retirement-eligible employees retiring prior to the fifth anniversary of the grant date will vest in a pro-rated portion of the award commensurate with the service performed. Such employees will receive the vested portion at the end of the five-year cliff period. These charges had no impact on the Company's cash flows or total shareholders' equity. See Note 3(q) and Note 20 for information relating to the Company's share-based payment awards.

(n) Guaranty Fund and Other Related Assessments

Liabilities for guaranty fund and other related assessments in the Company's insurance and reinsurance operations are accrued when the Company receives notice that an amount is payable, or earlier if a reasonable estimate of the assessment can be made.

(o) Treasury Shares

Treasury shares are common shares purchased by the Company and not subsequently canceled. These shares are recorded at

cost and result in a reduction of the Company's shareholders' equity in its Consolidated Balance Sheets.

(p) Goodwill and Intangible Assets

Goodwill represents the excess of the purchase price of an acquisition over the fair value of the net assets acquired and is assigned to the applicable reporting unit at acquisition. Goodwill is evaluated for impairment on an annual basis. Impairment tests may be performed more frequently if the facts and circumstances indicate a possible impairment. In performing impairment tests, the Company may first assess qualitative factors to determine whether it is more likely than not (that is, more than a 50% probability) that the fair value of a reporting unit exceeds its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test described in the accounting guidance.

Indefinite-lived intangible assets, such as insurance licenses are evaluated for impairment similar to goodwill. Finite-lived intangible assets and liabilities include the value of acquired insurance and reinsurance contracts, which are estimated based on the present value of future expected cash flows and amortized in proportion to the estimated profits expected to be realized. Other finite-lived intangible assets or liabilities, including favorable or unfavorable contracts, are amortized over their useful lives. Finite-lived intangible assets and liabilities are periodically reviewed for indicators of impairment. An impairment is recognized when the carrying amount is not recoverable from its undiscounted cash flows and is measured as the difference between the carrying amount and fair value.

If goodwill or intangible assets are impaired, such assets are written down to their fair values with the related expense recorded in the Company's results of operations. See Note 18 for information relating to the Company's goodwill and intangible assets.

(q) Recent Accounting Pronouncements

Recently Issued Accounting Standards Adopted

The Company adopted Financial Accounting Standards Board ("FASB") Accounting Standard Update ("ASU") 2015-02, "Consolidation (Topic 810)- *Amendments to the Consolidation Analysis*," in the 2016 first quarter. This ASU provided targeted improvements to consolidation guidance for limited partnerships and other similarly structured entities. The adoption of this ASU resulted in the Company concluding that it no longer had a variable interest in Alternative Re Ltd. and, as a result, no longer is required to consolidate Alternative Re Ltd. in its financial statements. Alternative Re Ltd. is a Bermuda-domiciled company that provides collateralized segregated accounts to its clients. The Company applied this new standard on a modified retrospective basis as of January

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1, 2016. Such adoption did not impact the Company's shareholders' equity or net income.

The adoption of this ASU also resulted in a review of certain funds within the Company's investment portfolio where the Company has a limited partnership interest. See Note 9 for disclosures on limited partnership interests.

The Company adopted ASU 2014-16, "Derivatives and Hedging (Topic 815) - *Determining Whether the Host Contract in a Hybrid Financial Instrument Issued in the Form of a Share Is More Akin to Debt or to Equity*," on a modified retrospective basis as of January 1, 2016. This ASU clarified the evaluation of whether the nature of a host contract within a hybrid instrument issued in the form of a share is more akin to debt or equity. Based on a review of hybrid instruments issued in the form of a share (both held in its investment portfolio and issued as part of capital raising), the Company determined the adoption of this ASU had no impact on the classification or accounting for its existing hybrid instruments.

The Company adopted ASU 2015-09, "Financial Services - Insurance (Topic 944) - *Disclosure about Short-Duration Contracts*," effective January 1, 2016. The amendments in this ASU enhance annual disclosures relating to reserves for losses and loss expenses by requiring the following: (1) net incurred and paid claims development information by accident year; (2) a reconciliation of incurred and paid claims development information to the aggregate carrying amount of the reserve for losses and loss expenses; (3) for each accident year presented, total IBNR plus expected development on case reserves included in the reserve for losses and loss expenses, accompanied by a description of reserving methodologies and any changes thereto; (4) for each accident year presented, quantitative information about claim frequency (unless impracticable) accompanied by a qualitative description of methodologies used for determining claim frequency information and any changes thereto; and (5) the average annual percentage payout of incurred claims by age for the same number of accident years presented. The amendments in this ASU became effective for the Company on January 1, 2016 and the required annual disclosures have been included in Note 7.

The Company adopted ASU 2014-15, "Presentation of Financial Statements - Going Concern (Subtopic 205-40)," effective for annual periods ending after December 15, 2016. This ASU provides guidance to address the diversity in practice in determining when there is substantial doubt about an entity's ability to continue as a going concern and when an entity must disclose certain relevant conditions and events. The amendments in this ASU require management to assess an entity's ability to continue as a going concern by incorporating and expanding upon certain principles that are currently in U.S. auditing standards. The adoption of this ASU did not have any effect on the Company's results of operations, financial position or liquidity.

The Company adopted ASU 2015-16, "Business Combinations (Topic 805) - *Simplifying the Accounting for Measurement-Period Adjustments*," effective January 1, 2016. The amendments in the ASU simplify the accounting for adjustments made to provisional amounts recognized in a business combination by eliminating the requirement to retrospectively account for those adjustments. The adoption of this ASU did not have any effect on the Company's results of operations, financial position or liquidity.

Recently Issued Accounting Standards Not Yet Adopted

ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)," was issued in the 2014 second quarter and will change the manner in which most companies recognize revenue. The ASU requires that revenue reflect the transfer of goods or services to customers based on the consideration or payment the company expects to be entitled to in exchange for those goods or services; however, the ASU does not change the accounting for insurance contracts or financial instruments. The ASU also requires enhanced disclosures about revenue. The ASU is effective in the 2018 first quarter and may be applied on a full retrospective or modified retrospective approach. The Company is currently assessing the impact the implementation of this ASU will have on its consolidated financial statements.

ASU 2016-01, "Financial Instruments - Overall (Subtopic 825-10) - *Recognition and Measurement of Financial Assets and Financial Liabilities*," was issued in the 2016 first quarter to enhance the reporting model for financial instruments and to provide improved financial information to readers of the financial statements. Among other provisions focused on improving the recognition and measurement of financial instruments, the ASU requires that equity investments be measured at fair value on the balance sheet with changes in fair value reported in the income statement and that an exit price notion be used when measuring the fair value of financial instruments for disclosure purposes. The ASU is effective in the 2018 first quarter and, aside from limited situations, cannot be early adopted. The Company is currently assessing the impact the implementation of this ASU will have on its consolidated financial statements.

ASU 2016-02, "Leases," was issued in the 2016 first quarter pertaining to the accounting for leases by a lessee. The ASU requires that the lessee recognize an asset and a liability for leases with a lease term greater than 12 months regardless of whether the lease is classified as operating or financing. Under current accounting, operating leases are not reflected in the balance sheet. The ASU is effective for the 2019 first quarter, though early application is permitted, and should be applied on a modified retrospective basis. The Company is currently assessing the impact the implementation of this ASU will have on its consolidated financial statements.

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ASU 2016-07, “Investments - Equity Method and Joint Ventures (Topic 323) - *Simplifying the Transition to the Equity Method of Accounting*,” was issued in the 2016 first quarter. The ASU eliminates the requirement that when an investment qualifies for use of the equity method as a result of an increase in the level of ownership interest or degree of influence, an investor must adjust the investment, results of operations, and retained earnings retroactively on a step-by step basis as if the equity method had been in effect during all previous periods that the investment had been held. The ASU is effective for interim and annual periods beginning after December 15, 2016, with early adoption permitted. The ASU will be adopted on a prospective basis. The adoption of this ASU is not expected to have a material effect on the Company's results of operations, financial position or liquidity.

ASU 2016-09, “Compensation - Stock Compensation (Topic 718),” was issued in the 2016 first quarter to improve and simplify the accounting for employee share-based payment transactions. The ASU provides simplifications with respect to income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows for these types of transactions. The guidance is effective for annual and interim periods beginning after December 15, 2016. The Company has adopted the ASU effective January 1, 2017. The Company anticipates that the ASU will not have a material impact on the consolidated financial statements and expects the primary change to be the recognition of excess tax benefits or deficiencies on vesting or settlement of awards as an income tax benefit or expense within net income and the related cash flows classified within operating activities. With respect to the forfeiture accounting policy election, the Company has elected to account for forfeitures as they occur, which did not result in a material cumulative effect adjustment.

ASU 2016-13, “Financial Instruments - Credit Losses (Topic 326),” was issued in the 2016 second quarter. The ASU changes how entities will measure credit losses for most financial assets and certain other instruments that aren't measured at fair value through net income. The ASU requires an entity to estimate its lifetime “expected credit loss” and record an allowance that, when deducted from the amortized cost basis of the financial asset, presents the net amount expected to be collected on the financial asset. The ASU is effective for the 2020 first quarter, though early application is permitted in the 2019 first quarter, and should be applied on a modified retrospective basis for the majority of the provisions. The Company is currently assessing the impact the implementation of this ASU will have on its consolidated financial statements.

ASU 2016-15, “Statement of Cash Flows - Classification of Certain Cash Receipts and Cash Payments (Topic 230),” was issued in the 2016 third quarter. The ASU addresses several clarifications on the presentation and classification of certain cash receipts and cash payments in the statement of cash flows. Among several other cash flow issues, the ASU specifically

addresses the classification of debt prepayment or debt issuance costs, contingent consideration payments made after a business combination and distributions received from equity method investees. The ASU also provides a broader principle on identifying the type of activity of the cash flow item by focusing on the cash flow item's nature and the predominant source or use of that item. The ASU is effective in the 2018 first quarter and should be applied retrospectively. Early adoption is permitted. The Company is assessing the impact the implementation of this ASU will have on the classification and presentation of its statements of cash flows.

ASU 2016-16, “Income Taxes - Intra-Entity Transfers of Assets Other than Inventory (Topic 740),” was issued in the 2016 fourth quarter. The ASU will require companies to recognize the income tax effects of intercompany sales and transfers of assets other than inventory (e.g., intangible assets) in the period in which the transfer occurs. The ASU is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. The Company is assessing the impact the implementation will have on its consolidated financial statements and disclosures.

ASU 2017-04, “Intangibles - Goodwill and Other (Topic 350),” was issued in January 2017. The ASU provides updated guidance that eliminates the requirement to calculate the implied fair value of goodwill (*i.e.*, step 2 of the current goodwill impairment test) to measure a goodwill impairment charge. Instead, entities will record an impairment charge by comparing a reporting unit's fair value with its carrying amount and recognizing an impairment charge for the excess of the carrying amount over estimated fair value (*i.e.*, step 1 of the current goodwill impairment test). The implied fair value of goodwill is currently determined in step 2 by deducting the fair value of all assets and liabilities of the reporting unit (determined in the same manner as a business combination) from the reporting unit's fair value as determined in step 1 (including any corporate-level assets or liabilities that were included in the determination of the carrying amount and fair value of the reporting unit in step 1). The ASU requires an entity to perform its annual, or interim, impairment test by either: (i) an initial qualitative assessment of factors (such as changes in management, key personnel, strategy, key technology or customers) that may impact a reporting unit's fair value and lead to the determination that it is more likely than not that the reporting unit's fair value is less than its carrying value, including goodwill (consistent with current guidance), or (ii) applying step 1. The ASU is effective for reporting periods beginning after December 15, 2019 and is to be applied prospectively. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The adoption of this ASU is not expected to have a material effect on the Company's results of operations, financial position or liquidity.

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4. Variable Interest Entity and Noncontrolling Interests

Variable interest entity

A VIE refers to an entity that has characteristics such as (i) insufficient equity at risk to allow the entity to finance its activities without additional financial support or (ii) instances where the equity investors, as a group, do not have characteristics of a controlling financial interest. The primary beneficiary of a VIE is defined as the variable interest holder that is determined to have the controlling financial interest as a result of having both (i) the power to direct the activities of a VIE that most significantly impact the economic performance of the VIE and (ii) the obligation to absorb losses or right to receive benefits from the VIE that could potentially be significant to the VIE. If a company is determined to be the primary beneficiary, it is required to consolidate the VIE in its financial statements.

Watford Holdings Ltd.

In March 2014, Watford Re raised approximately \$1.1 billion of capital consisting of \$907.3 million in common equity (\$895.6 million net of issuance costs) and \$226.6 million in preference equity (\$219.2 million net of issuance costs and discount). The Company invested \$100.0 million and acquired approximately 11% of Watford Holdings Ltd.'s common equity and a warrant to purchase additional common equity. Subsidiaries of the Company act as Watford Re's reinsurance and insurance underwriting managers. HPS Investment Partners, LLC (formerly Highbridge Principal Strategies, LLC) ("HPS") manages Watford Re's non-investment grade credit portfolios, and the Company manages Watford Re's investment grade portfolios, each under separate long term services agreements. In connection with the capital raise at Watford Re, warrants to purchase a total of 1.7 million common shares were issued to the Company and HPS. The warrants are only exercisable if Watford Re has consummated an initial public offering of its common shares or otherwise effected a listing of its common shares on a U.S. national securities exchange and certain targeted returns are achieved for existing common shareholders. The warrants expire on March 25, 2020. John Rathgeber, previously Vice Chairman of Arch Worldwide Reinsurance Group, is CEO of Watford Re. In addition, Marc Grandisson, President and COO of ACGL, and Nicolas Papadopoulos, CEO Reinsurance Group, serve on the board of directors of Watford Re.

The Company concluded that Watford Re is a VIE due to both the reinsurance underwriting management services agreements with the Company and the investment management agreements with HPS and the Company. These agreements provide for services for an extended period of time with limited termination rights by Watford Re. In addition, these agreements allow for

both the Company and HPS to participate in the favorable results of Watford Re in the form of performance fees. To determine if the Company is the primary beneficiary of Watford Re, the Company concluded that the most significant activity of Watford Re pertains to the insurance activities arising from the reinsurance underwriting management services agreement. As such, the Company concluded that it is the primary beneficiary of Watford Re and includes the results of Watford Re in its consolidated financial statements.

The Company concluded that Watford Re should be reflected in a separate operating segment ('other') and provides the income statement and total investable assets, total assets and total liabilities of Watford Re within Note 5.

Because Watford Re is an independent company, the assets of Watford Re can be used only to settle obligations of Watford Re and Watford Re is solely responsible for its own liabilities and commitments. The Company's financial exposure to Watford Re is limited to its investment in Watford Re's common shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions.

The following table provides the carrying amount and balance sheet caption in which the assets and liabilities of Watford Re are reported:

	December 31,	
	2016	2015
Assets		
Investments accounted for using the fair value option	\$ 1,857,623	\$ 1,617,107
Cash	74,893	108,550
Accrued investment income	17,017	19,249
Premiums receivable	189,911	162,263
Reinsurance recoverable on unpaid and paid losses and LAE	24,420	14,135
Ceded unearned premiums	12,145	11,129
Deferred acquisition costs, net	86,379	75,443
Receivable for securities sold	1,326	34,095
Goodwill and intangible assets	7,650	—
Other assets	111,386	80,361
Total assets of consolidated VIE	\$ 2,382,750	\$ 2,122,332
Liabilities		
Reserves for losses and loss adjustment expenses	\$ 510,809	\$ 290,997
Unearned premiums	293,480	249,980
Reinsurance balances payable	12,289	14,005
Revolving credit agreement borrowings	256,650	430,434
Payable for securities purchased	42,922	33,062
Other liabilities	88,976	53,624
Total liabilities of consolidated VIE	\$ 1,205,126	\$ 1,072,102
Redeemable noncontrolling interests	\$ 220,253	\$ 219,882

During 2016, Watford Re generated \$288.0 million of cash provided by operating activities, offset by cash used for investing and financing activities of \$118.8 million and \$195.6

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million respectively. During 2015, Watford Re generated \$293.7 million of cash provided by operating activities and \$361.9 million of cash provided by financing activities, partially offset by \$556.8 million of cash used for investing activities. During 2014, Watford Re generated \$39.3 million of cash provided by operating activities and \$1.16 billion of cash provided by financing activities, partially offset by \$1.18 billion of cash used for investing activities.

Non-redeemable noncontrolling interests

The Company accounts for the portion of Watford Re's common equity attributable to third party investors in the shareholders' equity section of its consolidated balance sheets. The noncontrolling ownership in Watford Re's common shares was approximately 89% at December 31, 2016. The portion of Watford Re's income or loss attributable to third party investors is recorded in the consolidated statements of income in 'net (income) loss attributable to noncontrolling interests.'

The following table sets forth activity in the non-redeemable noncontrolling interests:

	December 31,	
	2016	2015
Balance, beginning of year	\$ 738,831	\$ 769,081
Sale of shares to noncontrolling interests	—	—
Amounts attributable to noncontrolling interests	113,091	(29,984)
Foreign currency translation adjustments	(68)	(266)
Balance, end of year	<u>\$ 851,854</u>	<u>\$ 738,831</u>

Redeemable noncontrolling interests

The Company accounts for redeemable noncontrolling interests in the mezzanine section of its consolidated balance sheet. Such redeemable noncontrolling interests relate to the 9,065,200 cumulative redeemable preference shares ("Watford Preference Shares") issued in late March 2014 with a par value of \$0.01 per share and a liquidation preference of \$25.00 per share. The Watford Preference Shares were issued at a discounted amount of \$24.50 per share. Holders of the Watford Preference Shares will be entitled to receive, if declared by Watford Re's board, quarterly cash dividends on the last day of March, June, September, and December. Dividends will accrue from the closing date to June 30, 2019 at a fixed rate of 8.5% per annum. From June 30, 2019 and subsequent, dividends will accrue based on a floating rate equal to the 3 month U.S. dollar LIBOR (with a 1% floor) plus a margin based on the difference between the fixed rate and the 5 year mid swap rate to the floating rate as set out on the Bloomberg Screen IRSB 18. The Watford Preference Shares may be redeemed by Watford Re on or after June 30, 2019 or at the option of the preferred shareholders at any time on or after June 30, 2034. Because the redemption features are not solely within the control of Watford Re, the Company accounts for the redeemable noncontrolling interests

in the Watford Preference Shares in the mezzanine section of its consolidated balance sheets. Preferred dividends on the Watford Preference Shares, including the accretion of the discount and issuance costs, was \$19.6 million for both 2016 and 2015, compared to \$14.7 million for 2014. Preferred dividends, including the accretion of the discount and issuance costs, are included in 'amounts attributable to noncontrolling interests' in the Company's consolidated statements of income.

The following table sets forth activity in the redeemable noncontrolling interests:

	December 31,		
	2016	2015	2014
Balance, beginning of year	\$ 205,182	\$ 219,512	\$ —
Sale of shares to noncontrolling interests	—	—	219,233
Shares acquired by the Company (1)	—	(14,700)	—
Accretion of preference share issuance costs	371	370	279
Balance, end of year	<u>\$ 205,553</u>	<u>\$ 205,182</u>	<u>\$ 219,512</u>

(1) During the 2015 second quarter, the Company acquired Gulf Re, which owns 600,000 Watford Preference Shares. Such shares, net of a discount, along with related dividends and accretion of the discount, are eliminated in consolidation.

The portion of Watford Re's income or loss attributable to third party investors is recorded in the consolidated statements of income in 'net (income) loss attributable to noncontrolling interests' as summarized in the table below:

	December 31,		
	2016	2015	2014
Amounts attributable to non-redeemable noncontrolling interests	\$ (113,091)	\$ 29,984	\$ 27,823
Dividends attributable to redeemable noncontrolling interests	(18,349)	(18,828)	(14,728)
Net (income) loss attributable to noncontrolling interests	<u>\$ (131,440)</u>	<u>\$ 11,156</u>	<u>\$ 13,095</u>

Bellemeade Re I and II

UGC entered into an aggregate excess of loss reinsurance agreement with Bellemeade Re I Ltd. in July 2015 and with Bellemeade Re II Ltd. in May 2016 (the "Bellemeade Agreements"), special purpose reinsurance companies domiciled in Bermuda, each of which provided for up to approximately \$300 million of aggregate excess of loss reinsurance coverage at inception for new delinquencies on portfolios of in-force policies issued. See Note 8 for further details. At the time the Bellemeade Agreements were entered into, UGC evaluated the applicability of the accounting guidance that addresses VIEs. As a result of the evaluation of the Bellemeade Agreements, UGC concluded that both Bellemeade Re I Ltd. and Bellemeade Re II Ltd. are VIEs. However, given that the ceding insurers do not have the unilateral power to direct those activities that are significant to

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the economic performance of Bellemeade Re I Ltd. and Bellemeade Re II Ltd., UGC did not consolidate Bellemeade Re I Ltd. and Bellemeade Re II Ltd. in its consolidated financial statements. The Company acquired UGC's rights and obligations related to the Bellemeade Agreements at closing and agreed with the accounting conclusions related to Bellemeade Re I and Bellemeade Re II.

The following table presents total assets of Bellemeade Re I Ltd. and Bellemeade Re II Ltd. as well as the Company's maximum exposure to loss associated with these VIEs:

	Total VIE Assets	Maximum Exposure to Loss		
		On- Balance Sheet	Off- Balance Sheet	Total
Bellemeade Re I Ltd.	\$ 156,551	\$ 401	\$ 1,310	\$ 1,711
Bellemeade Re II Ltd.	298,578	9	1,103	1,112
Total	\$ 455,129	\$ 410	\$ 2,413	\$ 2,823

Irving Partners Limited Partnership

UGC is a limited partner in Irving Partners Limited Partnership ("Irving Partners"), the owner and operator of the office building of UGC's corporate headquarters in Greensboro, North Carolina. UGC concluded that Irving Partners is a VIE but that it is not the primary beneficiary. The Company acquired UGC's rights and obligations related to Irving Partners at closing and agreed with the accounting conclusions related to Irving Partners. The Company's maximum exposure to loss is approximately \$14.3 million at December 31, 2016.

5. Segment Information

The Company classifies its businesses into three underwriting segments — insurance, reinsurance and mortgage — and two other operating segments — 'other' and corporate (non-underwriting). The Company determined its reportable segments using the management approach described in accounting guidance regarding disclosures about segments of an enterprise and related information. The accounting policies of the segments are the same as those used for the preparation of the Company's consolidated financial statements. Intersegment business is allocated to the segment accountable for the underwriting results.

The Company's insurance, reinsurance and mortgage segments each have managers who are responsible for the overall profitability of their respective segments and who are directly accountable to the Company's chief operating decision makers, the Chairman and Chief Executive Officer of ACG, the President and Chief Operating Officer of ACG and the Chief Financial Officer of ACG. The chief operating decision makers do not assess performance, measure return on equity or

make resource allocation decisions on a line of business basis. Management measures segment performance for its three underwriting segments based on underwriting income or loss. The Company does not manage its assets by underwriting segment, with the exception of goodwill and intangible assets, and, accordingly, investment income is not allocated to each underwriting segment.

The insurance segment consists of the Company's insurance underwriting units which offer specialty product lines on a worldwide basis. Product lines include:

- *Construction and national accounts:* primary and excess casualty coverages to middle and large accounts in the construction industry and a wide range of products for middle and large national accounts, specializing in loss sensitive primary casualty insurance programs (including large deductible, self-insured retention and retrospectively rated programs).
- *Excess and surplus casualty:* primary and excess casualty insurance coverages, including middle market energy business, and contract binding, which primarily provides casualty coverage through a network of appointed agents to small and medium risks.
- *Lenders products:* collateral protection, debt cancellation and service contract reimbursement products to banks, credit unions, automotive dealerships and original equipment manufacturers and other specialty programs that pertain to automotive lending and leasing.
- *Professional lines:* directors' and officers' liability, errors and omissions liability, employment practices liability, fiduciary liability, crime, professional indemnity and other financial related coverages for corporate, private equity, venture capital, real estate investment trust, limited partnership, financial institution and not-for-profit clients of all sizes and medical professional and general liability insurance coverages for the healthcare industry. The business is predominately written on a claims-made basis.
- *Programs:* primarily package policies, underwriting workers' compensation and umbrella liability business in support of desirable package programs, targeting program managers with unique expertise and niche products offering general liability, commercial automobile, inland marine and property business with minimal catastrophe exposure.
- *Property, energy, marine and aviation:* primary and excess general property insurance coverages, including catastrophe-exposed property coverage, for commercial clients. Coverages for marine include hull, war, specie and liability. Aviation and stand-alone terrorism are also offered.
- *Travel, accident and health:* specialty travel and accident and related insurance products for individual, group

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travelers, travel agents and suppliers, as well as accident and health, which provides accident, disability and medical plan insurance coverages for employer groups, medical plan members, students and other participant groups.

- *Other*: includes alternative market risks (including captive insurance programs), excess workers' compensation and employer's liability insurance coverages for qualified self-insured groups, associations and trusts, and contract and commercial surety coverages, including contract bonds (payment and performance bonds) primarily for medium and large contractors and commercial surety bonds for Fortune 1000 companies and smaller transaction business programs.

The reinsurance segment consists of the Company's reinsurance underwriting units which offer specialty product lines on a worldwide basis. Product lines include:

- *Casualty*: provides coverage to ceding company clients on third party liability and workers' compensation exposures from ceding company clients, primarily on a treaty basis. Exposures include, among others, executive assurance, professional liability, workers' compensation, excess and umbrella liability, excess motor and healthcare business.
- *Marine and aviation*: provides coverage for energy, hull, cargo, specie, liability and transit, and aviation business, including airline and general aviation risks. Business written may also include space business, which includes coverages for satellite assembly, launch and operation for commercial space programs.
- *Other specialty*: provides coverage to ceding company clients for proportional motor and other lines including surety, accident and health, workers' compensation catastrophe, agriculture, trade credit and political risk.
- *Property catastrophe*: provides protection for most catastrophic losses that are covered in the underlying policies written by reinsureds, including hurricane, earthquake, flood, tornado, hail and fire, and coverage for other perils on a case-by-case basis. Property catastrophe reinsurance provides coverage on an excess of loss basis when aggregate losses and loss adjustment expense from a single occurrence of a covered peril exceed the retention specified in the contract.

- *Property excluding property catastrophe*: provides coverage for both personal lines and commercial property exposures and principally covers buildings, structures, equipment and contents. The primary perils in this business include fire, explosion, collapse, riot, vandalism, wind, tornado, flood and earthquake. Business is assumed on both a proportional and excess of loss basis. In addition, facultative business is written which focuses on commercial property risks on an excess of loss basis.
- *Other*: includes life reinsurance business on both a proportional and non-proportional basis, casualty clash business and, in limited instances, non-traditional business which is intended to provide insurers with risk management solutions that complement traditional reinsurance.

The mortgage segment includes the results of AMIC, UGRIC and UGMIC, leading providers of mortgage insurance products and services to the U.S. market, and Arch MI Europe, a leading provider of mortgage insurance products and services to the European market. AMIC, UGRIC and UGMIC are approved as eligible mortgage insurers by Federal National Mortgage Association ("Fannie Mae") and Federal Home Loan Mortgage Corporation ("Freddie Mac"), each a government sponsored enterprise, or "GSE." The mortgage segment also includes GSE credit risk-sharing transactions and mortgage reinsurance for the U.S. and Australian markets.

The corporate (non-underwriting) segment results include net investment income, other income (loss), other expenses incurred by the Company, interest expense, net realized gains or losses, net impairment losses included in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses, UGC transaction costs and other, income taxes and items related to the Company's non-cumulative preferred shares. Such amounts exclude the results of the 'other' segment.

The 'other' segment includes the results of Watford Re (see Note 4). Watford Re has its own management and board of directors that is responsible for the overall profitability of the 'other' segment. For the 'other' segment, performance is measured based on net income or loss.

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The following tables summarize the Company's underwriting income or loss by segment, together with a reconciliation of underwriting income or loss to net income available to Arch common shareholders, summary information regarding net premiums written and earned by major line of business and net premiums written by location:

	Year Ended December 31, 2016					
	Insurance	Reinsurance	Mortgage	Sub-Total	Other	Total
Gross premiums written (1)	\$ 3,027,049	\$ 1,494,397	\$ 499,725	\$ 5,019,363	\$ 535,094	\$ 5,202,134
Premiums ceded	(954,768)	(440,541)	(108,259)	(1,501,760)	(21,306)	(1,170,743)
Net premiums written	2,072,281	1,053,856	391,466	3,517,603	513,788	4,031,391
Change in unearned premiums	1,623	2,376	(104,750)	(100,751)	(45,818)	(146,569)
Net premiums earned	2,073,904	1,056,232	286,716	3,416,852	467,970	3,884,822
Other underwriting income	—	36,403	17,024	53,427	3,746	57,173
Losses and loss adjustment expenses	(1,359,313)	(475,762)	(28,943)	(1,864,018)	(321,581)	(2,185,599)
Acquisition expenses	(304,066)	(212,375)	(32,065)	(548,506)	(129,527)	(678,033)
Other operating expenses (2)	(353,782)	(143,408)	(101,293)	(598,483)	(25,163)	(623,646)
Underwriting income (loss)	\$ 56,743	\$ 261,090	\$ 141,439	459,272	(4,555)	454,717
Net investment income				277,193	89,549	366,742
Net realized gains (losses)				69,586	68,000	137,586
Net impairment losses recognized in earnings				(30,442)	—	(30,442)
Equity in net income (loss) of investment funds accounted for using the equity method				48,475	—	48,475
Other income (loss)				(800)	—	(800)
Corporate expenses (2)				(49,396)	—	(49,396)
UGC transaction costs and other (2)				(41,729)	—	(41,729)
Interest expense				(53,464)	(12,788)	(66,252)
Net foreign exchange gains (losses)				31,409	5,242	36,651
Income (loss) before income taxes				710,104	145,448	855,552
Income tax expense				(31,375)	1	(31,374)
Net income (loss)				678,729	145,449	824,178
Dividends attributable to redeemable noncontrolling interests				—	(18,349)	(18,349)
Amounts attributable to noncontrolling interests				—	(113,091)	(113,091)
Net income (loss) available to Arch				678,729	14,009	692,738
Preferred dividends				(28,070)	—	(28,070)
Net income (loss) available to Arch common shareholders				\$ 650,659	\$ 14,009	\$ 664,668
Underwriting Ratios						
Loss ratio	65.5%	45.0%	10.1%	54.6%	68.7%	56.3%
Acquisition expense ratio	14.7%	20.1%	11.2%	16.1%	27.7%	17.5%
Other operating expense ratio	17.1%	13.6%	35.3%	17.5%	5.4%	16.1%
Combined ratio	97.3%	78.7%	56.6%	88.2%	101.8%	89.9%
Goodwill and intangible assets	\$ 25,206	\$ 956	\$ 747,741	\$ 773,903	\$ 7,650	\$ 781,553
Total investable assets				\$ 18,636,189	\$ 1,857,763	\$ 20,493,952
Total assets				26,989,359	2,382,750	29,372,109
Total liabilities				18,855,858	1,205,126	20,060,984

- (1) Certain amounts included in the gross premiums written of each segment are related to intersegment transactions. Accordingly, the sum of gross premiums written for each segment does not agree to the total gross premiums written as shown in the table above due to the elimination of intersegment transactions in the total.
- (2) Certain expenses have been excluded from 'corporate expenses' and 'other operating expenses' totaling \$32.3 million and \$9.4 million, respectively, and reflected in 'UGC transaction costs and other.' See 'Comments on Regulation G' for a further discussion of the presentation of such items.

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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	Year Ended December 31, 2015					
	Insurance	Reinsurance	Mortgage	Sub-Total	Other	Total
Gross premiums written (1)	\$ 2,944,018	\$ 1,419,022	\$ 295,557	\$ 4,656,723	\$ 488,899	\$ 4,797,163
Premiums ceded	(898,347)	(380,614)	(28,064)	(1,305,151)	(22,940)	(979,632)
Net premiums written	2,045,671	1,038,408	267,493	3,351,572	465,959	3,817,531
Change in unearned premiums	(863)	38,727	(53,383)	(15,519)	(68,107)	(83,626)
Net premiums earned	2,044,808	1,077,135	214,110	3,336,053	397,852	3,733,905
Other underwriting income	1,993	10,606	18,430	31,029	4,468	35,497
Losses and loss adjustment expenses	(1,292,647)	(440,350)	(40,247)	(1,773,244)	(277,659)	(2,050,903)
Acquisition expenses, net	(299,317)	(223,632)	(45,076)	(568,025)	(113,451)	(681,476)
Other operating expenses	(354,416)	(155,811)	(82,370)	(592,597)	(14,919)	(607,516)
Underwriting income (loss)	<u>\$ 100,421</u>	<u>\$ 267,948</u>	<u>\$ 64,847</u>	433,216	(3,709)	429,507
Net investment income				271,680	76,410	348,090
Net realized gains (losses)				(99,133)	(86,709)	(185,842)
Net impairment losses recognized in earnings				(20,116)	—	(20,116)
Equity in net income (loss) of investment funds accounted for using the equity method				25,455	—	25,455
Other income (loss)				(399)	—	(399)
Corporate expenses				(49,745)	—	(49,745)
Interest expense				(41,518)	(4,356)	(45,874)
Net foreign exchange gains (losses)				62,624	3,494	66,118
Income (loss) before income taxes				582,064	(14,870)	567,194
Income tax expense				(40,612)	—	(40,612)
Net income (loss)				541,452	(14,870)	526,582
Dividends attributable to redeemable noncontrolling interests				—	(18,828)	(18,828)
Amounts attributable to noncontrolling interests				—	29,984	29,984
Net income (loss) available to Arch				541,452	(3,714)	537,738
Preferred dividends				(21,938)	—	(21,938)
Net income (loss) available to Arch common shareholders	<u>\$ 519,514</u>	<u>\$ (3,714)</u>	<u>\$ 515,800</u>			
Underwriting Ratios						
Loss ratio	63.2%	40.9%	18.8%	53.2%	69.8%	54.9%
Acquisition expense ratio	14.6%	20.8%	21.1%	17.0%	28.5%	18.3%
Other operating expense ratio	17.3%	14.5%	38.5%	17.8%	3.7%	16.3%
Combined ratio	<u>95.1%</u>	<u>76.2%</u>	<u>78.4%</u>	<u>88.0%</u>	<u>102.0%</u>	<u>89.5%</u>
Goodwill and intangible assets	<u>\$ 28,810</u>	<u>\$ 1,875</u>	<u>\$ 66,846</u>	<u>\$ 97,531</u>	<u>\$ —</u>	<u>\$ 97,531</u>
Total investable assets				\$ 14,644,831	\$ 1,696,107	\$ 16,340,938
Total assets				21,016,599	2,122,332	23,138,931
Total liabilities				14,956,274	1,072,102	16,028,376

- (1) Certain amounts included in the gross premiums written of each segment are related to intersegment transactions. Accordingly, the sum of gross premiums written for each segment does not agree to the total gross premiums written as shown in the table above due to the elimination of intersegment transactions in the total.

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	Year Ended December 31, 2014					
	Insurance	Reinsurance	Mortgage	Sub-Total	Other	Total
Gross premiums written (1)	\$ 3,008,669	\$ 1,527,245	\$ 227,356	\$ 4,760,394	\$ 288,627	\$ 4,840,616
Premiums ceded	(862,015)	(261,254)	(22,519)	(1,142,912)	(14,171)	(948,678)
Net premiums written	2,146,654	1,265,991	204,837	3,617,482	274,456	3,891,938
Change in unearned premiums	(129,284)	13,337	(11,264)	(127,211)	(170,979)	(298,190)
Net premiums earned	2,017,370	1,279,328	193,573	3,490,271	103,477	3,593,748
Other underwriting income	2,135	3,167	4,840	10,142	—	10,142
Losses and loss adjustment expenses	(1,260,953)	(532,450)	(55,674)	(1,849,077)	(70,173)	(1,919,250)
Acquisition expenses, net	(316,308)	(261,438)	(49,400)	(627,146)	(30,116)	(657,262)
Other operating expenses	(335,157)	(147,964)	(66,891)	(550,012)	(6,268)	(556,280)
Underwriting income (loss)	\$ 107,087	\$ 340,643	\$ 26,448	474,178	(3,080)	471,098
Net investment income				284,336	18,249	302,585
Net realized gains (losses)				133,384	(30,467)	102,917
Net impairment losses recognized in earnings				(30,150)	—	(30,150)
Equity in net income (loss) of investment funds accounted for using the equity method				19,883	—	19,883
Other income (loss)				(10,252)	—	(10,252)
Corporate expenses				(47,615)	(2,329)	(49,944)
Interest expense				(45,634)	—	(45,634)
Net foreign exchange gains (losses)				82,658	1,086	83,744
Income (loss) before income taxes				860,788	(16,541)	844,247
Income tax benefit				(22,987)	—	(22,987)
Net income (loss)				837,801	(16,541)	821,260
Dividends attributable to redeemable noncontrolling interests				—	(14,728)	(14,728)
Amounts attributable to noncontrolling interests				—	27,823	27,823
Net income (loss) available to Arch				837,801	(3,446)	834,355
Preferred dividends				(21,938)	—	(21,938)
Net income (loss) available to Arch common shareholders				\$ 815,863	\$ (3,446)	\$ 812,417
Underwriting Ratios						
Loss ratio	62.5%	41.6%	28.8%	53.0%	67.8%	53.4%
Acquisition expense ratio	15.7%	20.4%	25.5%	18.0%	29.1%	18.3%
Other operating expense ratio	16.6%	11.6%	34.6%	15.8%	6.1%	15.5%
Combined ratio	94.8%	73.6%	88.9%	86.8%	103.0%	87.2%
Goodwill and intangible assets	\$ 28,331	\$ 3,333	\$ 77,875	\$ 109,539	\$ —	\$ 109,539
Total investable assets				\$ 14,599,490	\$ 1,163,240	\$ 15,762,730
Total assets				20,485,226	1,482,516	21,967,742
Total liabilities				14,488,775	398,660	14,887,435

- (1) Certain amounts included in the gross premiums written of each segment are related to intersegment transactions. Accordingly, the sum of gross premiums written for each segment does not agree to the total gross premiums written as shown in the table above due to the elimination of intersegment transactions in the total.

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The following tables provide summary information regarding net premiums written and earned by major line of business and net premiums written by location:

INSURANCE SEGMENT	Year Ended December 31,		
	2016	2015	2014
Net premiums written (1)			
Professional lines (2)	\$ 440,149	\$ 434,024	\$ 476,604
Construction and national accounts	328,997	299,463	286,994
Programs	330,322	423,157	480,580
Travel, accident and health	224,380	160,132	145,732
Excess and surplus casualty (3)	214,863	204,856	212,519
Property, energy, marine and aviation	175,376	203,186	244,640
Lenders products	105,650	106,916	100,407
Other (4)	252,544	213,937	199,178
Total	\$ 2,072,281	\$ 2,045,671	\$ 2,146,654
Net premiums earned (1)			
Professional lines (2)	\$ 431,391	\$ 424,968	\$ 456,508
Construction and national accounts	322,072	296,828	277,811
Programs	357,715	446,512	460,392
Travel, accident and health	219,169	153,578	127,691
Excess and surplus casualty (3)	219,046	208,091	182,024
Property, energy, marine and aviation	188,938	216,127	244,974
Lenders products	98,517	90,906	94,438
Other (4)	237,056	207,798	173,532
Total	\$ 2,073,904	\$ 2,044,808	\$ 2,017,370
Net premiums written by client location (1)			
United States	\$ 1,718,415	\$ 1,710,918	\$ 1,726,181
Europe	173,423	187,020	240,136
Asia and Pacific	93,752	64,638	79,564
Other	86,691	83,095	100,773
Total	\$ 2,072,281	\$ 2,045,671	\$ 2,146,654
Net premiums written by underwriting location (1)			
United States	\$ 1,690,208	\$ 1,673,867	\$ 1,688,887
Europe	327,034	317,998	394,430
Other	55,039	53,806	63,337
Total	\$ 2,072,281	\$ 2,045,671	\$ 2,146,654

- (1) Insurance segment results include premiums written and earned assumed through intersegment transactions and exclude premiums written and earned ceded through intersegment transactions.
- (2) Includes professional liability, executive assurance and healthcare business.
- (3) Includes casualty and contract binding business.
- (4) Includes alternative markets, excess workers' compensation and surety business.

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REINSURANCE SEGMENT	Year Ended December 31,		
	2016	2015	2014
Net premiums written (1)			
Other specialty (2)	\$ 348,852	\$ 298,794	\$ 405,126
Casualty (3)	305,252	303,093	317,996
Property excluding property catastrophe (4)	267,548	280,511	343,043
Property catastrophe	75,789	91,620	137,471
Marine and aviation	37,790	50,834	50,444
Other (5)	18,625	13,556	11,911
Total	<u>\$ 1,053,856</u>	<u>\$ 1,038,408</u>	<u>\$ 1,265,991</u>
Net premiums earned (1)			
Other specialty (2)	\$ 329,994	\$ 311,307	\$ 424,725
Casualty (3)	300,160	310,249	327,518
Property excluding property catastrophe (4)	282,018	295,487	303,496
Property catastrophe	73,803	96,865	150,761
Marine and aviation	52,579	50,808	61,118
Other (5)	17,678	12,419	11,710
Total	<u>\$ 1,056,232</u>	<u>\$ 1,077,135</u>	<u>\$ 1,279,328</u>
Net premiums written (1)			
Pro rata	\$ 558,671	\$ 537,556	\$ 663,135
Excess of loss	495,185	500,852	602,856
Total	<u>\$ 1,053,856</u>	<u>\$ 1,038,408</u>	<u>\$ 1,265,991</u>
Net premiums earned (1)			
Pro rata	\$ 561,986	\$ 563,585	\$ 686,201
Excess of loss	494,246	513,550	593,127
Total	<u>\$ 1,056,232</u>	<u>\$ 1,077,135</u>	<u>\$ 1,279,328</u>
Net premiums written by client location (1)			
United States	\$ 448,763	\$ 470,484	\$ 589,255
Europe	337,168	307,165	355,735
Asia and Pacific	111,821	94,609	142,626
Bermuda	74,347	80,888	77,620
Other	81,757	85,262	100,755
Total	<u>\$ 1,053,856</u>	<u>\$ 1,038,408</u>	<u>\$ 1,265,991</u>
Net premiums written by underwriting location (1)			
United States	\$ 432,683	\$ 439,190	\$ 492,891
Bermuda	277,625	281,985	394,351
Europe	308,415	298,790	343,823
Other	35,133	18,443	34,926
Total	<u>\$ 1,053,856</u>	<u>\$ 1,038,408</u>	<u>\$ 1,265,991</u>

- (1) Reinsurance segment results include premiums written and earned assumed through intersegment transactions and exclude premiums written and earned ceded through intersegment transactions.
- (2) Includes proportional motor, surety, accident and health, workers' compensation catastrophe, agriculture, trade credit and other.
- (3) Includes executive assurance, professional liability, workers' compensation, excess motor, healthcare and other.
- (4) Includes facultative business.
- (5) Includes life, casualty clash and other.

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	Year Ended December 31,		
	2016	2015	2014
MORTGAGE SEGMENT			
Net premiums written by client location			
United States	\$ 280,509	\$ 193,617	\$ 184,333
Other	110,957	73,876	20,504
Total	<u>\$ 391,466</u>	<u>\$ 267,493</u>	<u>\$ 204,837</u>
Net premiums written by underwriting location			
United States	\$ 186,826	\$ 125,317	\$ 98,809
Other	204,640	142,176	106,028
Total	<u>\$ 391,466</u>	<u>\$ 267,493</u>	<u>\$ 204,837</u>
Net premiums earned by client location			
United States	\$ 265,527	\$ 202,930	\$ 187,194
Other	21,189	11,180	6,379
Total	<u>\$ 286,716</u>	<u>\$ 214,110</u>	<u>\$ 193,573</u>
Net premiums earned by underwriting location			
United States	\$ 155,929	\$ 113,062	\$ 92,236
Other	130,787	101,048	101,337
Total	<u>\$ 286,716</u>	<u>\$ 214,110</u>	<u>\$ 193,573</u>
OTHER SEGMENT			
	Year Ended December 31,		
	2016	2015	2014
Net premiums written (1)			
Casualty (2)	\$ 313,600	\$ 320,619	\$ 179,054
Other specialty (3)	121,635	112,666	66,524
Property catastrophe	11,462	12,441	9,280
Property excluding property catastrophe	701	2,892	564
Marine and aviation	1,709	1,256	1,251
Other (4)	64,681	16,085	17,783
Total	<u>\$ 513,788</u>	<u>\$ 465,959</u>	<u>\$ 274,456</u>
Net premiums earned (1)			
Casualty (2)	\$ 305,676	\$ 275,708	\$ 72,395
Other specialty (3)	116,859	101,588	24,157
Property catastrophe	11,421	12,540	5,115
Property excluding property catastrophe	1,436	1,340	182
Marine and aviation	1,811	1,585	789
Other (4)	30,767	5,091	839
Total	<u>\$ 467,970</u>	<u>\$ 397,852</u>	<u>\$ 103,477</u>
Net premiums written by client location (1)			
United States	\$ 344,445	\$ 350,228	\$ 186,795
Europe	97,459	67,279	54,131
Bermuda	68,945	39,414	27,977
Other	2,939	9,038	5,553
Total	<u>\$ 513,788</u>	<u>\$ 465,959</u>	<u>\$ 274,456</u>

- (1) Other segment results include premiums written and earned assumed through intersegment transactions and exclude premiums written and earned ceded through intersegment transactions.
- (2) Includes professional liability, excess motor, programs and other.
- (3) Includes proportional motor and other.
- (4) Includes mortgage and other.

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6. Reserve for Losses and Loss Adjustment Expenses

The following table represents an analysis of losses and loss adjustment expenses and a reconciliation of the beginning and ending reserve for losses and loss adjustment expenses:

	Year Ended December 31,		
	2016	2015	2014
Reserve for losses and loss adjustment expenses at beginning of year	\$ 9,125,250	\$ 9,036,448	\$ 8,824,696
Unpaid losses and loss adjustment expenses recoverable	1,828,837	1,778,303	1,748,250
Net reserve for losses and loss adjustment expenses at beginning of year	7,296,413	7,258,145	7,076,446
Net incurred losses and loss adjustment expenses relating to losses occurring in:			
Current year	2,455,563	2,336,026	2,246,152
Prior years	(269,964)	(285,123)	(326,902)
Total net incurred losses and loss adjustment expenses	2,185,599	2,050,903	1,919,250
Net losses and loss adjustment expense reserves of acquired business (1)	551,096	262	120,671
Foreign exchange (gains) losses	(102,367)	(143,653)	(160,486)
Net paid losses and loss adjustment expenses relating to losses occurring in:			
Current year	(445,700)	(454,179)	(347,270)
Prior years	(1,367,656)	(1,415,065)	(1,350,466)
Total net paid losses and loss adjustment expenses	(1,813,356)	(1,869,244)	(1,697,736)
Net reserve for losses and loss adjustment expenses at end of year	8,117,385	7,296,413	7,258,145
Unpaid losses and loss adjustment expenses recoverable	2,083,575	1,828,837	1,778,303
Reserve for losses and loss adjustment expenses at end of year	\$ 10,200,960	\$ 9,125,250	\$ 9,036,448

(1) The 2016 amount related to the acquisition of UGC while the 2014 amount related to the acquisition of Arch MI U.S.

2016 Prior Year Reserve Development

During 2016, the Company recorded estimated net favorable development on prior year loss reserves of \$270.0 million, which consisted of \$218.8 million from the reinsurance segment, \$33.1 million from the insurance segment, \$21.2 million from the mortgage segment less adverse development of \$3.1 million from the 'other' segment.

The reinsurance segment's net favorable development of \$218.8 million, or 20.7 points of net earned premium, consisted of \$133.8 million from short-tailed lines and \$85.0 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines included \$113.6 million from property catastrophe and property other than property catastrophe reserves, primarily from the 2009 to 2015 underwriting years (*i.e.*, losses attributable to contracts having an inception or renewal date within the given twelve-month period). Contained within this release was favorable development of \$8.7 million from named catastrophic events from prior accident years. The net reduction of loss estimates for the reinsurance segment's short-tailed lines primarily resulted from varying levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during 2016. Net favorable development

of \$85.0 million in medium-tailed and long-tailed lines included reductions in casualty reserves of \$86.1 million, primarily from the 2002 to 2013 underwriting years.

The insurance segment's net favorable development of \$33.1 million, or 1.6 points of net earned premium, consisted of \$8.7 million of net favorable development from short-tailed lines and \$24.4 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines predominantly consisted of \$17.2 million of net favorable development in property lines, primarily from the 2008 to 2014 accident years (*i.e.*, the year in which a loss occurred), partially offset by \$11.1 million of adverse development on travel, accident and health business from the 2012 to 2015 accident years. Contained within the short tail release in property lines was favorable development of \$11.3 million from named catastrophic events from prior accident years. Net favorable development in medium-tailed and long-tailed lines of \$24.4 million included \$53.8 million of net favorable development on professional lines, primarily from the 2008 to 2012 accident years, partially offset by \$33.1 million of net adverse development in program business, primarily from the 2013 to 2015 accident years. The adverse development in program business was primarily driven by a few inactive programs that were non-renewed in 2015 and early in 2016.

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The mortgage segment's net favorable development of \$21.2 million, or 7.4 points of net earned premium, for 2016, included \$18.5 million of favorable development on AMIC business, reflecting a decrease in the number of delinquent loans and a lower claim rate on such loans. Such development was primarily from the 2004 to 2008 and 2014 origination years. The mortgage segment also experienced net favorable development of \$2.7 million on U.S. mortgage reinsurance business.

2015 Prior Year Reserve Development

During 2015, the Company recorded estimated net favorable development on prior year loss reserves of \$285.1 million, which consisted of \$224.8 million from the reinsurance segment, \$47.2 million from the insurance segment, \$12.3 million from the mortgage segment and \$0.8 million from the 'other' segment.

The reinsurance segment's net favorable development of \$224.8 million, or 20.9 points of net earned premium, consisted of \$107.6 million from short-tailed lines and \$117.2 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines included \$80.9 million from property catastrophe and property other than property catastrophe reserves, primarily from the 2011 to 2014 underwriting years (*i.e.*, losses attributable to contracts having an inception or renewal date within the given twelve-month period). Contained within this release was favorable development of \$11.8 million from the 2005 to 2014 named catastrophic events. The net reduction of loss estimates for the reinsurance segment's short-tailed lines primarily resulted from varying levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during 2015. Net favorable development of \$117.2 million in medium-tailed and long-tailed lines included reductions in casualty reserves of \$99.7 million, primarily from the 2003 to 2006 underwriting years and the 2008 and 2009 underwriting years, and marine and aviation reserves of \$11.7 million, primarily from the 2008 to 2012 underwriting years. The balance of net favorable development was spread across various lines and underwriting years.

The insurance segment's net favorable development of \$47.2 million, or 2.3 points of net earned premium, consisted of \$27.3 million of net favorable development from short-tailed lines and \$19.9 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines predominantly consisted of \$32.4 million of net favorable development in property lines, primarily from the 2011 to 2014 accident years (*i.e.*, the year in which a loss occurred). Contained within this short tail release was favorable development of \$5.7 million from 2005 to 2014 named catastrophic events. Net favorable development in medium-tailed and long-tailed lines of \$19.9 million included \$29.7 million of net favorable development on professional lines,

primarily from the 2005 to 2010 accident years, partially offset by \$15.0 million of net adverse development in program business, primarily from the 2013 and 2014 accident years. The adverse development in program business was driven by a few programs that were non-renewed in 2015 and early in 2016.

The mortgage segment's net favorable development of \$12.3 million, or 5.7 points of net earned premium, included \$11.1 million of favorable development on AMIC business, reflecting a decrease in the number of delinquent loans and a lower claim rate on such loans. Such development was primarily from the 2003 to 2008 origination years. The mortgage segment also experienced net favorable development of \$1.2 million on U.S. mortgage reinsurance business.

2014 Prior Year Reserve Development

During 2014, the Company recorded estimated net favorable development on prior year loss reserves of \$326.9 million, which consisted of \$267.3 million from the reinsurance segment, \$58.7 million from the insurance segment and \$0.9 million from the mortgage segment.

The reinsurance segment's net favorable development of \$267.3 million, or 20.9 points of net earned premium, consisted of \$146.7 million from short-tailed lines and \$120.6 million of net favorable development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines included \$107.6 million from property catastrophe and property other than property catastrophe reserves, primarily from the 2011 to 2013 underwriting years. Contained within this release was favorable development of \$23.3 million from the 2005 to 2013 named catastrophic events. The net reduction of loss estimates for the reinsurance segment's short-tailed lines primarily resulted from varying levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during 2014. Net favorable development of \$120.6 million in medium-tailed and long-tailed lines included reductions in casualty reserves of \$101.6 million, primarily from the 2003 to 2006 underwriting years and the 2009 and 2010 underwriting years, and marine and aviation reserves of \$14.7 million, primarily from the 2008 to 2012 underwriting years. The balance of net favorable development was spread across various lines and underwriting years.

The insurance segment's net favorable development of \$58.7 million, or 2.9 points of net earned premium, consisted of \$73.5 million of net favorable development from short-tailed lines, partially offset by \$14.8 million of net adverse development from medium-tailed and long-tailed lines. Favorable development in short-tailed lines predominantly consisted of \$60.5 million of net favorable development in property lines, primarily from the 2008 to 2013 accident years, with the balance emanating from lenders products, primarily from the 2012 accident year, and travel and accident, primarily from the 2012 and 2013 accident years. Contained within this short tail release

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was favorable development of \$7.9 million from 2005 to 2013 named catastrophic events. Net adverse development in medium-tailed and long-tailed lines of \$14.8 million included a net increase of \$41.3 million in construction reserves, primarily from the 2009 to 2013 accident years. The adverse development in construction was largely driven by general liability claims involving New York labor law matters. In addition, the insurance segment experienced \$26.2 million of net adverse development in program business, primarily from the 2011 and 2012 accident years. Such amounts were partially offset by \$39.0 million of net favorable development on professional lines, primarily from the 2003 to 2011 accident years, and \$7.8 million of net favorable development on surety business, primarily from the 2011 to 2013 accident years.

7. Short Duration Contracts

The Company's reserves for losses and loss adjustment expenses primarily relate to short-duration contracts with various characteristics (e.g., type of coverage, geography, claims duration). The Company considered such information in determining the level of disaggregation for disclosures related to its short-duration contracts, as detailed in the table below:

Reportable segment	Level of disaggregation	Included lines of business
Insurance	Property energy, marine and aviation	Property energy, marine and aviation
	Third party occurrence business	Excess and surplus casualty (excluding contract binding); construction and national accounts; and other (including alternative market risks, excess workers' compensation and employer's liability insurance coverages)
	Third party claims-made business	Professional lines
	Multi-line and other specialty	Programs; contract binding (part of excess and surplus casualty); travel, accident and health; lenders products; and other (contract and commercial surety coverages)
Reinsurance	Casualty	Casualty
	Property catastrophe	Property catastrophe
	Property excluding property catastrophe	Property excluding property catastrophe
	Marine and aviation	Marine and aviation
	Other specialty	Other specialty
Mortgage	Direct mortgage insurance in the U.S.	Mortgage insurance on U.S. primary exposures

The Company determined the following to be insignificant for disclosure purposes: (i) amounts included in the 'other' segment (i.e., Watford Re) as described in Note 4; (ii) certain mortgage business, including non-U.S. primary business, global

mortgage reinsurance and various GSE credit risk-sharing products; and (iii) certain reinsurance business, including casualty clash and non-traditional lines. Such amounts are included as reconciling items.

The Company is required to establish reserves for losses and loss adjustment expenses ("loss reserves") that arise from the business the Company underwrites. Loss reserves for the insurance, reinsurance and mortgage segments represent estimates of future amounts required to pay losses and loss adjustment expenses for insured or reinsured events which have occurred at or before the balance sheet date. Loss reserves do not reflect contingency reserve allowances to account for future loss occurrences. Losses arising from future events will be estimated and recognized at the time the losses are incurred and could be substantial.

Insurance Segment

Loss reserves for the insurance segment are comprised of (1) estimated amounts for (1) reported losses ("case reserves") and (2) incurred but not reported losses ("IBNR reserves"). Generally, claims personnel determine whether to establish a case reserve for the estimated amount of the ultimate settlement of individual claims. The estimate reflects the judgment of claims personnel based on general corporate reserving practices, the experience and knowledge of such personnel regarding the nature and value of the specific type of claim and, where appropriate, advice of counsel. The Company also contracts with a number of outside third party administrators in the claims process who, in certain cases, have limited authority to establish case reserves. The work of such administrators is reviewed and monitored by our claims personnel. Loss reserves are also established to provide for loss adjustment expenses and represent the estimated expense of settling claims, including legal and other fees and the general expenses of administering the claims adjustment process. Periodically, adjustments to the case reserves may be made as additional information is reported or payments are made. IBNR reserves are established to provide for incurred claims which have not yet been reported at the balance sheet date as well as to adjust for any projected variance in case reserving. Actuaries estimate ultimate losses and loss adjustment expenses using various generally accepted actuarial methods applied to known losses and other relevant information. Like case reserves, IBNR reserves are adjusted as additional information becomes known or payments are made. The process of estimating reserves involves a considerable degree of judgment by management and, as of any given date, is inherently uncertain.

Ultimate losses and loss adjustment expenses are generally determined by extrapolation of claim emergence and settlement patterns observed in the past that can reasonably be expected to persist into the future. In forecasting ultimate losses and loss adjustment expenses with respect to any line of business, past experience with respect to that line of business is the primary

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resource, developed through both industry and company experience, but cannot be relied upon in isolation. Uncertainties in estimating ultimate losses and loss adjustment expenses are magnified by the length of the time lag between when a claim actually occurs and when it is reported and settled. This time lag is sometimes referred to as the “claim-tail.” During this period additional facts regarding coverages written in prior accident years, as well as about actual claims and trends, may become known and, as a result, may lead to adjustments of the related loss reserves. If the Company determines that an adjustment is appropriate, the adjustment is recorded in the accounting period in which such determination is made. Accordingly, should loss reserves need to be increased or decreased in the future from amounts currently established, future results of operations would be negatively or positively impacted respectively. The Company authorizes managing general agents, general agents and other producers to write program business on the Company’s behalf within prescribed underwriting authorities. This delegated authority process introduces additional complexity to the actuarial determination of unpaid future losses and loss adjustment expenses. In order to monitor adherence to the underwriting guidelines given to such parties, the Company periodically performs underwriting and claims due diligence reviews.

In determining ultimate losses and loss adjustment expenses, the cost to indemnify claimants, provide needed legal defense and other services for insureds and administer the investigation and adjustment of claims are considered. These claim costs are influenced by many factors that change over time, such as expanded coverage definitions as a result of new court decisions, inflation in costs to repair or replace damaged property, inflation in the cost of medical services and legislated changes in statutory benefits, as well as by the particular, unique facts that pertain to each claim. As a result, the rate at which claims arose in the past and the costs to settle them may not always be representative of what will occur in the future. The factors influencing changes in claim costs are often difficult to isolate or quantify and developments in paid and incurred losses from historical trends are frequently subject to multiple and conflicting interpretations. Changes in coverage terms or claims handling practices may also cause future experience and/or development patterns to vary from the past. A key objective of actuaries in developing estimates of ultimate losses and loss adjustment expenses, and resulting IBNR reserves, is to identify aberrations and systemic changes occurring within historical experience and adjust for them so that the future can be projected more reliably. Because of the factors previously discussed, this process requires the substantial use of informed judgment and is inherently uncertain.

Although loss reserves are initially determined based on underwriting and pricing analyses, the Company’s insurance segment applies several generally accepted actuarial methods, as discussed below, on a quarterly basis to evaluate the loss reserves, in addition to the expected loss method, in particular

for loss reserves from more mature accident years (the year in which a loss occurred). Each quarter, as part of the reserving process, the segments’ actuaries reaffirm that the assumptions used in the reserving process continue to form a sound basis for the projection of liabilities. If actual loss activity differs substantially from expectations based on historical information, an adjustment to loss reserves may be supported. The Company places more or less reliance on a particular actuarial method based on the facts and circumstances at the time the estimates of loss reserves are made.

These methods generally fall into one of the following categories or are hybrids of one or more of the following categories:

- *Expected loss methods* - these methods are based on the assumption that ultimate losses vary proportionately with premiums. Expected loss and loss adjustment expense ratios are typically developed based upon the information derived by underwriters and actuaries during the initial pricing of the business, supplemented by industry data available from organizations, such as statistical bureaus and consulting firms, where appropriate. These ratios consider, among other things, rate increases and changes in terms and conditions that have been observed in the market. Expected loss methods are useful for estimating ultimate losses and loss adjustment expenses in the early years of long-tailed lines of business, when little or no paid or incurred loss information is available, and is commonly applied when limited loss experience exists for a company.
- *Historical incurred loss development methods* - these methods assume that the ratio of losses in one period to losses in an earlier period will remain constant in the future. These methods use incurred losses (*i.e.*, the sum of cumulative historical loss payments plus outstanding case reserves) over discrete periods of time to estimate future losses. Historical incurred loss development methods may be preferable to historical paid loss development methods because they explicitly take into account open cases and the claims adjusters’ evaluations of the cost to settle all known claims. However, historical incurred loss development methods necessarily assume that case reserving practices are consistently applied over time. Therefore, when there have been significant changes in how case reserves are established, using incurred loss data to project ultimate losses may be less reliable than other methods.
- *Historical paid loss development methods* - these methods, like historical incurred loss development methods, assume that the ratio of losses in one period to losses in an earlier period will remain constant. These methods use historical loss payments over discrete periods of time to estimate future losses and necessarily assume that factors that have affected paid losses in the past, such as inflation or the

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effects of litigation, will remain constant in the future. Because historical paid loss development methods do not use incurred losses to estimate ultimate losses, they may be more reliable than the other methods that use incurred losses in situations where there are significant changes in how incurred losses are established by a company's claims adjusters. However, historical paid loss development methods are more leveraged (meaning that small changes in payments have a larger impact on estimates of ultimate losses) than actuarial methods that use incurred losses because cumulative loss payments take much longer to equal the expected ultimate losses than cumulative incurred amounts. In addition, and for similar reasons, historical paid loss development methods are often slow to react to situations when new or different factors arise than those that have affected paid losses in the past.

- *Adjusted historical paid and incurred loss development methods* - these methods take traditional historical paid and incurred loss development methods and adjust them for the estimated impact of changes from the past in factors such as inflation, the speed of claim payments or the adequacy of case reserves. Adjusted historical paid and incurred loss development methods are often more reliable methods of predicting ultimate losses in periods of significant change, provided the actuaries can develop methods to reasonably quantify the impact of changes. As such, these methods utilize more judgment than historical paid and incurred loss development methods.
- *Bornhuetter-Ferguson ("B-F") paid and incurred loss methods* - these methods utilize actual paid and incurred losses and expected patterns of paid and incurred losses, taking the initial expected ultimate losses into account to determine an estimate of expected ultimate losses. The B-F paid and incurred loss methods are useful when there are few reported claims and a relatively less stable pattern of reported losses.
- *Additional analyses* - other methodologies are often used in the reserving process for specific types of claims or events, such as catastrophic or other specific major events. These include vendor catastrophe models, which are typically used in the estimation of loss reserves at the early stage of known catastrophic events before information has been reported to an insurer or reinsurer.

In the initial reserving process for short-tail insurance lines (consisting of property, energy, marine and aviation and other exposures including travel, accident and health and lenders products), the Company relies on a combination of the reserving methods discussed above. For catastrophe-exposed business, the reserving process also includes the usage of catastrophe models for known events and a heavy reliance on analysis of individual catastrophic events and management judgment. The development of losses on short-tail business can be unstable,

especially for policies characterized by high severity, low frequency losses. As time passes, for a given accident year, additional weight is given to the paid and incurred B-F loss development methods and historical paid and incurred loss development methods in the reserving process. The Company makes a number of key assumptions in their reserving process, including that historical paid and reported development patterns are stable, catastrophe models provide useful information about our exposure to catastrophic events that have occurred and underwriters' judgment as to potential loss exposures can be relied on. The expected loss ratios used in the initial reserving process for short-tail business have varied over time due to changes in pricing, reinsurance structure, estimates of catastrophe losses, policy changes (such as attachment points, class and limits) and geographical distribution. As losses in short-tail lines are reported relatively quickly, expected loss ratios are selected for the current accident year based upon actual attritional loss ratios for earlier accident years, adjusted for rate changes, inflation, changes in reinsurance programs and expected attritional losses based on modeling. Furthermore, ultimate losses for short-tail business are known in a reasonably short period of time.

In the initial reserving process for medium-tail and long-tail insurance lines (consisting of third party occurrence business, third party claims made business, and other exposures including surety, programs and contract binding exposures), the Company primarily relies on the expected loss method. The development of the Company's medium-tail and long-tail business may be unstable, especially if there are high severity major events, as a portion of the Company's casualty business is in high excess layers. As time passes, for a given accident year, additional weight is given to the paid and incurred B-F loss development methods and historical paid and incurred loss development methods in the reserving process. The Company makes a number of key assumptions in reserving for medium-tail and long-tail lines, including that the pricing loss ratio is the best estimate of the ultimate loss ratio at the time the policy is entered into, that the loss development patterns, which are based on a combination of company and industry loss development patterns and adjusted to reflect differences in the insurance segment's mix of business, are reasonable and that claims personnel and underwriters analyses of our exposure to major events are assumed to be the best estimate of exposure to the known claims on those events. The expected loss ratios used in the initial reserving process for medium-tail and long-tail business for recent accident years have varied over time, in some cases significantly, from earlier accident years. As the credibility of historical experience for earlier accident years increases, the experience from these accident years will be given a greater weighting in the actuarial analysis to determine future accident year expected loss ratios, adjusted for changes in pricing, loss trends, terms and conditions and reinsurance structure.

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The following tables present information on the insurance segment's short-duration insurance contracts:

Property, energy, marine and aviation (\$000's except claim count)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 180,300	\$ 220,177	\$ 187,103	\$ 191,023	\$ 187,303	\$ 184,258	\$ 181,503	\$ 179,248	\$ 179,294	\$ 179,215	\$ 932	4,062
2008		339,300	331,932	313,024	299,069	298,402	289,622	283,777	280,463	283,531	2,319	4,403
2009			255,287	258,267	229,937	218,691	204,281	197,929	196,029	190,667	2,185	3,652
2010				197,546	187,073	151,676	139,427	128,222	128,644	127,156	2,423	3,697
2011					267,025	267,423	226,461	214,736	206,218	204,481	3,392	4,268
2012						229,206	229,405	202,601	196,335	194,119	12,675	4,281
2013							157,159	154,694	147,034	140,395	9,190	4,277
2014								145,297	142,317	144,652	32,779	3,864
2015									110,447	107,735	40,625	4,169
2016										102,676	34,675	2,683
Total										\$1,674,627		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance										
2007	\$ 40,978	\$ 101,911	\$ 145,291	\$ 159,580	\$ 165,845	\$ 169,741	\$ 169,858	\$ 172,842	\$ 175,683	\$ 176,283
2008		50,266	128,858	199,533	224,394	255,474	260,660	262,706	262,008	262,284
2009			38,410	115,616	142,329	158,489	167,715	172,116	176,154	176,504
2010				28,438	65,468	87,117	105,419	110,490	117,533	119,582
2011					34,172	98,209	139,566	164,795	194,233	199,088
2012						19,904	91,331	135,696	158,410	164,921
2013							31,752	83,601	109,130	117,571
2014								25,601	52,114	76,452
2015									23,173	63,711
2016										24,335
Total										1,380,731
All outstanding liabilities before 2007, net of reinsurance										1,363
Liabilities for losses and loss adjustment expenses, net of reinsurance										\$ 295,259

Third party occurrence business (\$000's except claim count)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 268,067	\$ 275,081	\$ 283,325	\$ 282,740	\$ 291,621	\$ 294,766	\$ 294,141	\$ 298,986	\$ 299,423	\$ 294,204	\$ 26,942	26,292
2008		278,204	282,265	281,245	279,598	298,158	303,261	306,393	302,909	300,866	42,064	36,199
2009			273,058	268,710	270,512	271,824	275,442	276,665	267,635	263,116	52,872	51,284
2010				248,292	266,310	261,743	261,308	264,158	262,345	259,723	62,203	63,405
2011					260,946	267,847	282,959	288,329	282,059	285,345	80,290	71,745
2012						265,116	287,512	291,708	293,351	279,246	118,915	66,229
2013							293,284	309,051	318,064	314,455	164,137	66,882
2014								331,206	337,345	340,532	223,353	74,755
2015									359,605	393,118	291,557	75,501
2016										389,577	351,395	57,143
Total										\$3,120,182		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance										
2007	\$ 6,235	\$ 29,577	\$ 66,183	\$ 101,303	\$ 138,428	\$ 167,708	\$ 196,780	\$ 209,623	\$ 223,251	\$ 243,300
2008		6,229	21,688	50,072	85,710	119,466	165,068	190,532	204,294	218,661
2009			5,674	21,612	47,085	82,665	122,619	153,207	171,226	183,675
2010				6,840	26,955	50,112	80,853	117,488	137,189	157,541
2011					7,095	26,817	48,102	81,827	125,962	151,093
2012						7,062	31,741	62,196	88,918	116,911
2013							7,081	30,305	73,401	105,218
2014								9,457	40,731	72,032
2015									11,213	45,530
2016										11,679
Total										1,305,640
All outstanding liabilities before 2007, net of reinsurance										70,695
Liabilities for losses and loss adjustment expenses, net of reinsurance										\$ 1,885,237

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Third party claims-made business (\$000's except claim count)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 313,327	\$ 333,142	\$ 330,096	\$ 310,623	\$ 300,065	\$ 295,111	\$ 279,908	\$ 279,060	\$ 281,838	\$ 284,328	\$ 10,943	7,720
2008		320,029	371,723	383,498	389,285	375,226	385,537	389,148	377,994	365,249	12,868	9,015
2009			283,463	317,012	307,431	305,911	302,656	303,022	306,165	302,116	13,747	10,742
2010				283,569	309,727	332,382	338,122	331,809	315,178	297,514	32,880	12,088
2011					281,279	323,922	315,357	310,093	315,591	293,510	38,377	11,626
2012						309,371	313,500	312,254	307,283	282,944	60,737	14,350
2013							294,863	312,946	316,776	312,915	113,414	13,685
2014								259,705	274,880	292,489	119,174	12,839
2015									254,152	271,435	174,944	13,194
2016										269,549	225,772	10,239
										Total	\$2,972,049	

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
2007	\$ 9,840	\$ 57,758	\$ 110,737	\$ 144,064	\$ 166,272	\$ 196,781	\$ 215,120	\$ 223,237	\$ 231,871	\$ 239,677		
2008		18,644	73,431	131,715	174,184	207,946	233,022	245,246	283,796	288,782		
2009			11,406	55,499	107,932	149,558	186,663	201,419	235,436	244,876		
2010				13,914	70,907	128,465	163,200	198,603	215,170	229,464		
2011					13,570	71,303	128,086	171,287	204,263	223,086		
2012						17,584	68,132	119,412	162,316	185,328		
2013							18,829	85,894	135,420	175,063		
2014								13,709	62,711	127,515		
2015									8,960	50,999		
2016										10,354		
										Total	1,775,144	
All outstanding liabilities before 2007, net of reinsurance										53,954		
Liabilities for losses and loss adjustment expenses, net of reinsurance										\$1,250,859		

Multi-line and other specialty (\$000's except claim count)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 223,393	\$ 240,582	\$ 243,348	\$ 240,117	\$ 239,588	\$ 235,951	\$ 233,464	\$ 232,620	\$ 231,402	\$ 231,981	\$ 4,963	32,633
2008		228,695	246,732	240,576	237,319	237,341	232,272	231,545	228,401	227,468	7,215	39,744
2009			286,895	296,932	291,644	285,646	276,936	278,035	272,662	269,675	10,107	40,048
2010				256,023	261,927	251,186	255,766	247,901	243,315	242,303	11,677	44,234
2011					271,646	285,059	283,771	284,977	285,238	283,400	13,732	54,438
2012						379,395	393,785	394,910	394,674	395,219	27,467	67,941
2013							400,715	415,737	411,000	433,993	47,420	85,200
2014								493,562	527,661	532,344	82,716	123,576
2015									524,826	543,531	156,384	136,528
2016										536,653	278,077	123,476
										Total	\$3,696,567	

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
2007	\$ 76,114	\$ 139,391	\$ 167,853	\$ 189,802	\$ 201,898	\$ 203,151	\$ 210,310	\$ 217,077	\$ 221,896	\$ 224,767		
2008		62,249	119,413	135,592	164,594	185,255	194,457	204,545	208,695	211,535		
2009			75,760	140,220	183,482	206,753	219,888	242,817	248,576	252,445		
2010				62,655	117,813	150,886	186,101	206,237	214,732	220,669		
2011					70,609	146,646	180,270	217,850	241,456	251,414		
2012						98,357	219,836	282,088	318,584	342,606		
2013							106,488	207,498	267,731	326,511		
2014								137,183	273,421	354,600		
2015									167,595	303,966		
2016										194,866		
										Total	2,683,379	
All outstanding liabilities before 2007, net of reinsurance										36,997		
Liabilities for losses and loss adjustment expenses, net of reinsurance										\$1,050,185		

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The following table presents the average annual percentage payout of incurred losses and allocated loss adjustment expenses by age, net of reinsurance, as of December 31, 2016:

Average annual percentage payout of incurred losses and allocated loss adjustment expenses by age, net of reinsurance										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Property, energy, marine and aviation	19.6%	32.5%	19.8%	10.0%	6.8%	2.8%	1.1%	0.5%	0.8%	0.3%
Third party occurrence business	2.5%	7.5%	10.2%	11.5%	13.1%	10.6%	8.3%	4.6%	4.7%	6.8%
Third party claims-made business	4.6%	17.4%	18.3%	13.1%	10.1%	6.9%	6.5%	5.5%	2.2%	2.7%
Other	28.1%	25.6%	13.2%	11.6%	7.0%	4.0%	3.0%	2.1%	1.7%	1.2%

Reinsurance Segment

Loss reserves for the Company's reinsurance segment are comprised of (1) case reserves, (2) additional case reserves ("ACRs") and (3) IBNR reserves. The Company receives reports of claims notices from ceding companies and records case reserves based upon the amount of reserves recommended by the ceding company. Case reserves may be supplemented by ACRs, which are often estimated by the Company's claims personnel ahead of official notification from the ceding company, or when judgment regarding the size or severity of the known event differs from the ceding company. In certain instances, the Company establishes ACRs even when the ceding company does not report any liability on a known event. In addition, specific claim information reported by ceding companies or obtained through claim audits can alert the Company to emerging trends such as changing legal interpretations of coverage and liability, claims from unexpected sources or classes of business, and significant changes in the frequency or severity of individual claims. Such information is often used in the process of estimating IBNR reserves. IBNR reserves are established to provide for incurred claims which have not yet been reported at the balance sheet date as well as to adjust for any projected variance in case reserving. Actuaries estimate ultimate losses and loss adjustment expenses using various generally accepted actuarial methods applied to known losses and other relevant information. Like case reserves, IBNR reserves are adjusted as additional information becomes known or payments are made. The process of estimating reserves involves a considerable degree of judgment by management and, as of any given date, is inherently uncertain.

The estimation of loss reserves for the reinsurance segment is subject to the same risk factors as the estimation of loss reserves for the insurance segment. In addition, the inherent uncertainties of estimating such reserves are even greater for reinsurers, due primarily to the following factors: (1) the claim-tail for reinsurers is generally longer because claims are first reported to the ceding company and then to the reinsurer through one or more intermediaries, (2) the reliance on premium estimates, where reports have not been received from the ceding company, in the reserving process, (3) the potential for writing a number of reinsurance contracts with different ceding companies with the same exposure to a single loss event, (4) the diversity of loss development patterns among different types of reinsurance contracts, (5) the necessary reliance on the

ceding companies for information regarding reported claims and (6) the differing reserving practices among ceding companies.

As with the insurance segment, the process of estimating loss reserves for the reinsurance segment involves a considerable degree of judgment by management and, as of any given date, is inherently uncertain. As discussed above, such uncertainty is greater for reinsurers compared to insurers. As a result, our reinsurance operations obtain information from numerous sources to assist in the process. Pricing actuaries from the reinsurance segment devote considerable effort to understanding and analyzing a ceding company's operations and loss history during the underwriting of the business, using a combination of ceding company and industry statistics. Such statistics normally include historical premium and loss data by class of business, individual claim information for larger claims, distributions of insurance limits provided, loss reporting and payment patterns, and rate change history. This analysis is used to project expected loss ratios for each treaty during the upcoming contract period.

As mentioned above, there can be a considerable time lag from the time a claim is reported to a ceding company to the time it is reported to the reinsurer. The lag can be several years in some cases and may be attributed to a number of reasons, including the time it takes to investigate a claim, delays associated with the litigation process, the deterioration in a claimant's physical condition many years after an accident occurs, the case reserving approach of the ceding company, etc. In the reserving process, the Company assumes that such lags are predictable, on average, over time and therefore the lags are contemplated in the loss reporting patterns used in their actuarial methods. This means that the reinsurance segment must rely on estimates for a longer period of time than does an insurance company. Backlogs in the recording of assumed reinsurance can also complicate the accuracy of loss reserve estimation. As of December 31, 2016 there were no significant backlogs related to the processing of assumed reinsurance information at our reinsurance operations.

The reinsurance segment relies heavily on information reported by ceding companies, as discussed above. In order to determine the accuracy and completeness of such information, underwriters, actuaries, and claims personnel often perform audits of ceding companies and regularly review information received from ceding companies for unusual or unexpected

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results. Material findings are usually discussed with the ceding companies. The Company sometimes encounters situations where they determine that a claim presentation from a ceding company is not in accordance with contract terms. In these situations, the Company attempts to resolve the dispute with the ceding company. Most situations are resolved amicably and without the need for litigation or arbitration. However, in the infrequent situations where a resolution is not possible, the Company will vigorously defend its position in such disputes.

Although loss reserves are initially determined based on underwriting and pricing analysis, the Company applies several generally accepted actuarial methods, as discussed above, on a quarterly basis to evaluate its loss reserves in addition to the expected loss method, in particular for loss reserves from more mature underwriting years (the year in which business is underwritten). Each quarter, as part of the reserving process, the Company's actuaries reaffirm that the assumptions used in the reserving process continue to form a sound basis for projection of liabilities. If actual loss activity differs substantially from expectations based on historical information, an adjustment to loss reserves may be supported. Estimated loss reserves for more mature underwriting years are now based more on actual loss activity and historical patterns than on the initial assumptions based on pricing indications. More recent underwriting years rely more heavily on internal pricing assumptions. The Company places more or less reliance on a particular actuarial method based on the facts and circumstances at the time the estimates of loss reserves are made.

In the initial reserving process for short-tail reinsurance lines (consisting of property excluding property catastrophe and property catastrophe exposures), the Company relies on a combination of the reserving methods discussed above. For known catastrophic events, the reserving process also includes the usage of catastrophe models and a heavy reliance on analysis which includes ceding company inquiries and management judgment. The development of property losses may be unstable, especially where there is high catastrophic exposure, may be characterized by high severity, low frequency losses for excess and catastrophe-exposed business and may be highly correlated across contracts. As time passes, for a given underwriting year, additional weight is given to the paid and incurred B-F loss development methods and historical paid and incurred loss development methods in the reserving process. The Company makes a number of key assumptions in reserving for short-tail lines, including that historical paid and reported development

patterns are stable, catastrophe models provide useful information about our exposure to catastrophic events that have occurred and our underwriters' judgment and guidance received from ceding companies as to potential loss exposures may be relied on. The expected loss ratios used in the initial reserving process for property exposures have varied over time due to changes in pricing, reinsurance structure, estimates of catastrophe losses, terms and conditions and geographical distribution. As losses in property lines are reported relatively quickly, expected loss ratios are selected for the current underwriting year incorporating the experience for earlier underwriting years, adjusted for rate changes, inflation, changes in reinsurance programs, expectations about present and future market conditions and expected attritional losses based on modeling. Due to the short-tail nature of property business, reported loss experience emerges quickly and ultimate losses are known in a reasonably short period of time.

In the initial reserving process for medium-tail and long-tail reinsurance lines (consisting of casualty, other specialty, marine and aviation and other exposures), the Company primarily relies on the expected loss method. The development of medium-tail and long-tail business may be unstable, especially if there are high severity major events, with business written on an excess of loss basis typically having a longer tail than business written on a pro rata basis. As time passes, for a given underwriting year, additional weight is given to the paid and incurred B-F loss development methods and historical paid and incurred loss development methods in the reserving process. Our reinsurance operations make a number of key assumptions in reserving for medium-tail and long-tail lines, including that the pricing loss ratio is the best estimate of the ultimate loss ratio at the time the contract is entered into, historical paid and reported development patterns are stable and claims personnel and underwriters analyses of our exposure to major events are assumed to be our best estimate of our exposure to the known claims on those events. The expected loss ratios used in our reinsurance operations' initial reserving process for medium-tail and long-tail contracts have varied over time due to changes in pricing, terms and conditions and reinsurance structure. As the credibility of historical experience for earlier underwriting years increases, the experience from these underwriting years will be used in the actuarial analysis to determine future underwriting year expected loss ratios, adjusted for changes in pricing, loss trends, terms and conditions and reinsurance structure.

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The following tables present information on the reinsurance segment's short-duration insurance contracts:

Casualty (\$000's)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 339,471	\$ 347,611	\$ 367,008	\$ 378,503	\$ 365,063	\$ 355,953	\$ 341,681	\$ 331,034	\$ 323,786	\$ 316,814	\$ 45,289	N/A
2008		278,537	284,514	283,878	278,461	270,815	269,719	270,502	266,409	262,719	36,402	N/A
2009			260,256	280,724	297,999	278,634	274,198	263,679	247,356	233,054	38,885	N/A
2010				192,444	193,735	196,639	188,353	177,871	167,019	161,228	48,412	N/A
2011					150,110	153,867	147,770	142,495	138,174	134,743	40,718	N/A
2012						144,052	141,974	137,878	126,251	116,002	52,556	N/A
2013							165,598	158,775	154,772	148,653	80,130	N/A
2014								214,107	219,239	216,094	126,333	N/A
2015									218,030	217,274	141,715	N/A
2016										209,180	176,069	N/A
									Total	\$2,015,761		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
2007	\$ 6,182	\$ 27,195	\$ 71,546	\$ 107,715	\$ 170,191	\$ 188,544	\$ 206,153	\$ 217,314	\$ 227,003	\$ 237,771		
2008		3,489	22,307	46,426	72,601	92,764	130,723	159,593	181,419	193,634		
2009			3,140	18,994	46,491	73,086	104,576	133,898	147,965	158,363		
2010				2,110	21,290	38,905	54,036	72,244	82,816	93,738		
2011					2,267	11,853	22,529	39,386	55,610	65,273		
2012						1,261	8,671	15,405	26,789	38,228		
2013							2,453	10,019	23,534	44,101		
2014								3,920	16,067	40,982		
2015									4,439	20,214		
2016										5,680		
									Total	897,984		
All outstanding liabilities before 2007, net of reinsurance										234,649		
Liabilities for losses and loss adjustment expenses, net of reinsurance										\$1,352,426		

Property catastrophe (\$000's)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 60,675	\$ 38,886	\$ 30,012	\$ 28,520	\$ 27,051	\$ 26,840	\$ 26,675	\$ 26,655	\$ 26,831	\$ 26,596	\$ 308	N/A
2008		147,178	105,238	120,521	119,782	120,188	115,795	114,415	114,037	113,875	749	N/A
2009			73,956	32,002	19,364	17,887	16,781	16,541	15,644	15,325	361	N/A
2010				93,365	48,133	39,852	39,797	43,587	43,989	43,819	—	N/A
2011					203,858	184,408	166,175	153,535	149,731	149,015	88	N/A
2012						149,573	122,745	108,509	102,074	99,862	409	N/A
2013							65,837	46,432	35,314	30,888	1,540	N/A
2014								44,326	30,171	24,754	2,644	N/A
2015									31,996	16,734	4,235	N/A
2016										22,760	9,399	N/A
									Total	\$ 543,628		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
2007	\$ 13,706	\$ 21,939	\$ 25,775	\$ 25,855	\$ 26,194	\$ 26,241	\$ 26,326	\$ 26,313	\$ 25,970	\$ 26,016		
2008		52,416	79,478	89,007	97,740	108,293	111,990	112,702	112,873	112,931		
2009			9,892	13,263	13,047	14,604	14,856	14,857	14,881	14,898		
2010				8,531	23,656	31,788	38,020	39,515	41,113	42,523		
2011					59,795	82,064	113,742	128,585	134,124	136,654		
2012						25,850	70,839	83,804	90,709	92,868		
2013							12,138	18,782	23,334	25,029		
2014								13,644	19,654	18,060		
2015									(3,693)	(3,193)		
2016										(7,486)		
									Total	458,300		
All outstanding liabilities before 2007, net of reinsurance										303		
Liabilities for losses and loss adjustment expenses, net of reinsurance										\$ 85,631		

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Property excluding property catastrophe (\$000's)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 142,050	\$ 128,558	\$ 122,590	\$ 111,925	\$ 109,247	\$ 105,659	\$ 105,646	\$ 104,460	\$ 105,754	\$ 101,832	\$ 729	N/A
2008		210,512	185,509	189,154	194,523	189,762	186,879	184,860	184,388	178,561	2,465	N/A
2009			215,218	192,530	170,108	163,338	162,588	160,510	157,665	148,172	2,710	N/A
2010				142,014	127,666	117,476	111,888	109,942	107,820	104,063	3,226	N/A
2011					205,149	178,301	165,807	162,099	157,962	156,675	5,986	N/A
2012						155,491	121,156	123,121	118,551	114,131	6,232	N/A
2013							114,884	76,420	70,090	65,771	5,854	N/A
2014								142,589	116,738	98,649	12,300	N/A
2015									212,989	187,633	25,827	N/A
2016										174,752	79,520	N/A
									Total	\$1,330,239		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
2007	\$ 36,890	\$ 74,745	\$ 89,947	\$ 94,729	\$ 97,857	\$ 98,887	\$ 100,484	\$ 100,642	\$ 99,871	\$ 99,859		
2008		55,694	124,489	145,496	159,947	165,559	171,634	172,666	172,516	173,437		
2009			65,920	116,161	133,401	137,739	139,566	142,078	143,190	143,998		
2010				37,675	76,223	87,938	93,069	95,253	96,401	97,045		
2011					47,248	120,354	140,156	144,623	146,674	147,773		
2012						25,988	77,704	92,807	101,457	102,402		
2013							25,862	42,427	49,464	52,643		
2014								23,402	62,598	71,411		
2015									75,211	118,223		
2016										33,210		
									Total	1,040,001		
									All outstanding liabilities before 2007, net of reinsurance	4,509		
									Liabilities for losses and loss adjustment expenses, net of reinsurance	\$ 294,747		

Marine and aviation (\$000's)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 67,699	\$ 71,250	\$ 66,807	\$ 64,235	\$ 61,521	\$ 60,803	\$ 59,162	\$ 60,361	\$ 60,570	\$ 58,560	\$ 1,341	N/A
2008		131,809	157,870	164,599	158,626	154,928	153,538	151,688	151,659	149,716	2,866	N/A
2009			49,336	40,839	35,093	33,365	30,499	29,253	27,827	27,572	2,632	N/A
2010				40,969	42,278	38,500	35,404	33,499	31,886	31,137	1,780	N/A
2011					39,290	32,870	35,809	32,375	28,758	27,161	6,514	N/A
2012						58,923	58,781	54,902	52,111	50,901	8,739	N/A
2013							38,534	37,213	36,100	34,681	10,930	N/A
2014								30,636	28,806	27,011	10,136	N/A
2015									33,530	37,309	11,232	N/A
2016										27,311	25,067	N/A
									Total	\$ 471,359		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
2007	\$ 10,843	\$ 25,867	\$ 38,493	\$ 44,133	\$ 47,683	\$ 50,811	\$ 52,018	\$ 54,517	\$ 54,321	\$ 54,641		
2008		11,103	50,449	82,868	112,265	127,726	140,184	142,487	144,334	144,743		
2009			6,761	15,999	19,088	22,145	22,178	22,520	23,084	23,548		
2010				8,523	13,401	16,751	18,477	20,216	26,524	27,170		
2011					4,420	12,120	16,526	19,224	15,937	16,610		
2012						2,652	11,396	27,433	33,176	34,906		
2013							4,780	13,377	17,987	20,929		
2014								3,994	7,763	11,303		
2015									(4)	13,380		
2016										(7,339)		
									Total	339,891		
									All outstanding liabilities before 2007, net of reinsurance	16,183		
									Liabilities for losses and loss adjustment expenses, net of reinsurance	\$ 147,651		

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Other specialty (\$000's)

Incurred losses and allocated loss adjustment expenses, net of reinsurance											December 31, 2016	
Accident year	Year ended December 31,										Total of IBNR liabilities plus expected development on reported claims	Cumulative number of reported claims
	2007 unaudited	2008 unaudited	2009 unaudited	2010 unaudited	2011 unaudited	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2007	\$ 55,559	\$ 41,032	\$ 37,663	\$ 34,588	\$ 31,588	\$ 30,292	\$ 30,346	\$ 30,539	\$ 30,001	\$ 29,542	\$ 1,508	N/A
2008		42,296	35,752	32,445	28,650	26,775	28,541	27,106	26,987	26,021	2,264	N/A
2009			59,371	48,707	43,703	37,716	35,608	33,618	34,789	35,224	2,760	N/A
2010				42,433	32,330	25,673	23,465	22,465	22,119	21,879	1,965	N/A
2011					109,167	94,121	90,278	88,641	86,776	85,405	3,290	N/A
2012						211,292			185,979	183,891	19,920	N/A
2013							243,333	218,117	208,819	205,432	31,524	N/A
2014								268,335	250,573	252,528	50,079	N/A
2015									204,749	196,298	55,630	N/A
2016										217,117	106,192	N/A
									Total	\$1,253,337		

Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		
2007	\$ 7,457	\$ 21,293	\$ 24,682	\$ 25,581	\$ 26,218	\$ 26,324	\$ 26,576	\$ 27,048	\$ 27,058	\$ 27,105		
2008		5,074	14,292	19,727	20,932	21,603	23,303	22,664	23,265	23,317		
2009			8,989	26,785	29,591	29,462	29,419	29,297	29,782	30,538		
2010				3,998	13,229	16,288	17,298	18,085	18,670	18,887		
2011					27,956	55,853	67,577	72,081	75,412	77,102		
2012						42,894	114,990	136,209	146,641	153,986		
2013							54,446	114,017	138,843	154,794		
2014								67,189	143,024	178,004		
2015									53,500	111,864		
2016										62,865		
									Total	838,462		
									All outstanding liabilities before 2007, net of reinsurance	7,336		
									Liabilities for losses and loss adjustment expenses, net of reinsurance	\$ 422,211		

The following table presents the average annual percentage payout of incurred losses and allocated loss adjustment expenses by age, net of reinsurance, as of December 31, 2016:

Average annual percentage payout of incurred losses and allocated loss adjustment expenses by age, net of reinsurance											
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Casualty	1.7%	7.1%	10.0%	11.2%	12.4%	9.3%	7.3%	5.4%	3.9 %	3.4%	
Property catastrophe	28.7%	24.4%	10.3%	7.8%	3.6%	1.8%	1.1%	0.1%	(0.6)%	0.2%	
Property excluding property catastrophe	32.3%	36.3%	11.9%	5.1%	1.9%	1.6%	0.9%	0.2%	(0.1)%	—%	
Marine and aviation	10.1%	24.6%	17.4%	10.8%	2.2%	7.5%	1.9%	2.4%	— %	0.5%	
Other specialty	25.4%	37.3%	13.2%	4.4%	2.7%	2.2%	0.2%	2.0%	0.1 %	0.2%	

Mortgage Segment

The Company's mortgage segment includes (1) direct mortgage insurance in the U.S., (2) direct mortgage insurance in Europe, (3) global mortgage reinsurance and (4) various GSE credit risk-sharing products, with the latter three categories excluded on the basis of insignificance for the purposes of presenting disclosures related to short duration contracts.

For direct mortgage insurance business, the Company establishes case reserves for loans that have been reported as delinquent by loan servicers as well as those that are delinquent but not reported (IBNR reserves). The Company's U.S. mortgage insurance operations also reserve for the expenses of adjusting claims related to these delinquencies. The trigger that creates a case reserve estimate is that an insured loan is reported to us as being two payments in arrears. The actuarial reviews and documentation created in the reserving process are completed in accordance with generally accepted actuarial standards. The selected assumptions reflect the actuary's

judgment based on historical data and experience combined with information concerning current underwriting, economic, judicial, regulatory and other influences on ultimate claim settlements.

Because the reserving process requires the Company to forecast future conditions, it is inherently uncertain and requires significant judgment and estimation. The use of different estimates would result in the establishment of different reserve levels. Additionally, changes in accounting estimates are likely to occur from period to period as economic conditions change and the ultimate liability may vary significantly from the estimates used. Major risk factors include (but are not limited to) changes in home prices and borrower equity, which can limit the borrower's ability to sell the property and satisfy the outstanding loan balance, and changes in unemployment, which can affect the borrower's income and ability to make mortgage payments.

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The lead methodology used by the Company is a frequency-severity method based on the inventory of pending delinquencies. Each month the loan servicers report the delinquency status of each insured loan. Using the frequency-severity method allows the Company to take advantage of its knowledge of the number of delinquent loans and the coverage provided (“risk size”) on those loans by directly relating the reserves to these amounts. The delinquencies are grouped into homogeneous cohorts for analysis, reflecting product type and age of delinquency. A claim rate is then developed for each cohort which represents the frequency with which the delinquencies become claims. The claim rates are based on an analysis of the patterns of emerging cure counts and claim counts, the foreclosure status of the pending delinquencies, the product and geographical mix of the delinquencies and our view of future economic and claim conditions, which include trends in home prices and unemployment. Claim rates can vary materially by age of delinquency, depending on the mix of delinquencies and economic conditions.

Claim size estimates are determined by examining the risk sizes on the delinquent loans and estimating the portion of risk that will be paid, as well as any expenses. This is done based on a review of historical data, an assessment of economic conditions and the level of equity the borrowers may have in their homes, as well as considering loss mitigation opportunities. Mortgage insurance is generally not subject to large claim sizes, as with some other lines of insurance. A claim size over \$250,000 is

rare, and this helps reduce the volatility of claim size estimates. The claim rate and claim size assumptions generate case reserves for the population of reported delinquencies. The reserve for unreported delinquencies (included in IBNR reserves) is estimated by looking at historical patterns of reporting. Claim rates and claim sizes can then be assigned to estimated unreported delinquencies using assumptions made in the establishment of case reserves.

Mortgage insurance reserves are short-tail, in the sense that the vast majority of delinquencies are resolved within two years of being reported. While reserves are initially analyzed by reserve cohort, as described above, they are also rolled up by underwriting year to ensure that reserve assumptions are consistent with the performance of the underwriting year. The accuracy of prior reserve assumptions is also checked in hindsight to determine if adjustments are needed.

Loss reserves for the Company’s mortgage reinsurance business and GSE credit-risk sharing transactions are comprised of case reserves and IBNR reserves. The Company’s mortgage reinsurance operations receive reports of delinquent loans and claims notices from ceding companies and record case reserves based upon the amount of reserves recommended by the ceding company. In addition, specific claim and delinquency information reported by ceding companies is used in the process of estimating IBNR reserves.

The tables below reflect the acquired business of UGC across all periods presented. Due to the length of time for which claims incurred typically remain outstanding prior to payment and the Company’s formation of the mortgage segment in 2014, the Company determined that five accident years was sufficient for its current disclosures. The following table presents information on the mortgage segment’s short-duration insurance contracts:

Direct mortgage insurance business in the U.S. (\$000's except claim count)						December 31, 2016	
Incurred losses and allocated loss adjustment expenses, net of reinsurance						Total of IBNR liabilities plus expected development on reported claims	Cumulative number of paid claims
Accident year	Year ended December 31,						
	2012 unaudited	2013 unaudited	2014 unaudited	2015 unaudited	2016		
2012	520,835	480,592	475,317	469,238	467,296	871	14,671
2013		469,311	419,668	411,793	405,809	1,108	8,875
2014			316,095	297,151	279,434	2,273	5,264
2015				222,790	197,238	3,216	2,496
2016					183,556	6,291	319
				Total	\$ 1,533,333		
Cumulative paid losses and allocated loss adjustment expenses, net of reinsurance							
2012	(106,065)	186,605	327,605	395,695	426,024		
2013		41,447	203,957	308,956	353,189		
2014			20,099	129,159	201,925		
2015				16,159	92,431		
2016					11,462		
					1,085,031		
				All outstanding liabilities before 2007, net of reinsurance	116,380		
					\$ 564,682		

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The following table presents the average annual percentage payout of incurred losses and allocated loss adjustment expenses by age, net of reinsurance, as of December 31, 2016:

Average annual percentage payout of incurred losses and allocated loss adjustment expenses by age, net of reinsurance					
	Year 1	Year 2	Year 3	Year 4	Year 5
U.S. Primary	1.8%	45.1%	27.4%	12.7%	6.5%

Other Segment

Loss reserves for the ‘other’ segment (*i.e.*, Watford Re) are comprised of case reserves, ACRs and IBNR reserves. For all business assumed by Watford Re, the Company acts as reinsurance underwriting manager, provides actuarial and risk management services and recommends a level of loss reserves to Watford Re. The Company does not guarantee or provide credit support for Watford Re, and the Company’s financial exposure to Watford Re is limited to its investment in Watford Re’s common and preferred shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions. The estimation of loss reserves for Watford Re is subject to the same risk factors as the estimation of loss reserves for the Company’s insurance, reinsurance and mortgage segments as described earlier. Watford Re performs its own reserve reviews and sets its loss reserves independently. As noted previously, the Company determined that amounts in the ‘other’ segment are insignificant for the purposes of these footnote disclosures.

For the year ended December 31, 2016, the Company did not make any significant changes in its methodologies or assumptions as described above (a) to determine the presented amounts of IBNR reserves, (b) for expected development on case reserves.

The Company measures claim frequency information on an individual claim count basis. Claim counts are provided for the insurance and mortgage segments, where reliable information is available. For insurance business, any claim which is reported to the Company is included in the count, even if it is subsequently settled without liability to the Company. The Company does not include claim count information for losses from U.S. insurance pool business where individual loss information is unavailable and impracticable to obtain. For mortgage business, only delinquencies which subsequently become claims are included in the claim count. For reinsurance business, claim counts are not provided. A significant amount of the Company’s reinsurance business is written on a proportional basis, for which individual loss information is typically unavailable and impracticable to obtain.

For the year ended December 31, 2016, the Company did not make any significant changes in its methodologies or assumptions as described above to calculate the cumulative claim frequency.

The following table represents a reconciliation of the disclosures of net incurred and paid loss development tables to the reserve for losses and loss adjustment expenses at December 31, 2016:

	December 31, 2016
Net outstanding liabilities	
Insurance	
Property, energy, marine and aviation	\$ 295,259
Third party occurrence business	1,885,237
Third party claims-made business	1,250,859
Multi-line and other specialty	1,050,185
Reinsurance	
Casualty	1,352,426
Property catastrophe	85,631
Property excluding property catastrophe	294,747
Marine and aviation	147,651
Other specialty	422,211
Mortgage	
U.S. primary	564,682
Other short duration lines not included in disclosures	602,324
Total for short duration lines	7,951,212
Unpaid losses and loss adjustment expenses recoverable	
Insurance	
Property, energy, marine and aviation	230,421
Third party occurrence business	946,133
Third party claims-made business	689,470
Multi-line and other specialty	137,503
Reinsurance	
Casualty	306,229
Property catastrophe	43,271
Property excluding property catastrophe	28,620
Marine and aviation	18,708
Other specialty	29,330
Mortgage	
U.S. primary	26,420
Other short duration lines not included in disclosures	11,693
Intercompany eliminations	(388,295)
Total for short duration lines	2,079,503
Lines other than short duration	20,111
Discounting	(18,246)
Unallocated claims adjustment expenses	168,380
	170,245
Total gross reserves for losses and loss adjustment expenses	\$ 10,200,960

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8. Reinsurance

In the normal course of business, the Company's insurance subsidiaries cede a portion of their premium through pro rata and excess of loss reinsurance agreements on a treaty or facultative basis. The Company's reinsurance subsidiaries participate in "common account" retrocessional arrangements for certain pro rata treaties. Such arrangements reduce the effect of individual or aggregate losses to all companies participating on such treaties, including the reinsurers, such as the Company's reinsurance subsidiaries, and the ceding company. In addition, the Company's reinsurance subsidiaries may purchase retrocessional coverage as part of their risk management program. Reinsurance recoverables are recorded as assets, predicated on the reinsurers' ability to meet their obligations under the reinsurance agreements. If the reinsurers are unable to satisfy their obligations under the agreements, the Company's insurance or reinsurance subsidiaries would be liable for such defaulted amounts.

The effects of reinsurance on the Company's written and earned premiums and losses and loss adjustment expenses with unaffiliated reinsurers were as follows:

	Year Ended December 31,		
	2016	2015	2014
Premiums Written			
Direct	\$ 3,337,690	\$ 3,086,919	\$ 3,100,946
Assumed	1,864,444	1,710,244	1,739,670
Ceded	(1,170,743)	(979,632)	(948,678)
Net	<u>\$ 4,031,391</u>	<u>\$ 3,817,531</u>	<u>\$ 3,891,938</u>
Premiums Earned			
Direct	\$ 3,192,653	\$ 3,002,508	\$ 2,914,755
Assumed	1,730,884	1,659,456	1,574,049
Ceded	(1,038,715)	(928,059)	(895,056)
Net	<u>\$ 3,884,822</u>	<u>\$ 3,733,905</u>	<u>\$ 3,593,748</u>
Losses and Loss Adjustment Expenses			
Direct	\$ 1,976,853	\$ 1,830,785	\$ 1,763,492
Assumed	847,038	752,304	621,346
Ceded	(638,292)	(532,186)	(465,588)
Net	<u>\$ 2,185,599</u>	<u>\$ 2,050,903</u>	<u>\$ 1,919,250</u>

The Company monitors the financial condition of its reinsurers and attempts to place coverages only with substantial, financially sound carriers. At December 31, 2016, approximately 75.7% of the Company's reinsurance recoverables on paid and unpaid losses (not including ceded unearned premiums) of \$2.11 billion were due from carriers which had an A.M. Best rating of "A-" or better while 24.2% were from companies not rated, a substantial portion of which was collateralized through reinsurance trusts or letters of credit. The largest reinsurance recoverables from any one carrier was approximately 2.4% of the Company's total shareholders'

equity at December 31, 2016. At December 31, 2015, approximately 77.9% of the Company's reinsurance recoverables on paid and unpaid losses (not including ceded unearned premiums) of \$1.87 billion were due from carriers which had an A.M. Best rating of "A-" or better while 22.0% were from companies not rated, a substantial portion of which was collateralized through reinsurance trusts or letters of credit. The largest reinsurance recoverables from any one carrier was approximately 3.4% of the Company's total shareholders' equity at December 31, 2015. Although the Company has not experienced any material credit losses to date, an inability of its reinsurers or retrocessionaires to meet their obligations to it over the relevant exposure periods for any reason could have a material adverse effect on its financial condition and results of operations.

On July 29, 2015, UGC entered into an aggregate excess of loss reinsurance agreement with Bellemeade Re, a special purpose reinsurance company domiciled in Bermuda, at inception for new delinquencies on a portfolio of in-force policies issued between January 1, 2009 and March 31, 2013 through a mortgage insurance-linked notes offering by Bellemeade Re I Ltd. ("Bellemeade Re I"), a special purpose reinsurance company domiciled in Bermuda. The approximately \$300 million of aggregate excess of loss reinsurance coverage decreases over a ten-year period as the underlying covered mortgages amortize and was \$156.6 million as of December 31, 2016. For the coverage period, the ceding insurers will retain the first layer of \$129.9 million of aggregate losses and Bellemeade Re will then provide second layer coverage up to the outstanding coverage amount. The ceding insurers will then retain losses in excess of the outstanding coverage limit.

On May 9, 2016, UGC entered into an aggregate excess of loss reinsurance agreement with Bellemeade Re at inception for new delinquencies on a portfolio of in-force policies issued in 2008 and prior years through a mortgage insurance-linked notes offering by Bellemeade Re II Ltd. ("Bellemeade Re II"), a special purpose reinsurance company domiciled in Bermuda. The approximately \$300 million coverage amount decreases over a ten-year period as the underlying covered mortgages amortize and was \$298.6 million as of December 31, 2016. For the coverage period, the ceding insurers will retain the first layer of \$646.9 million of aggregate losses and Bellemeade Re II will then provide second layer coverage up to the outstanding coverage amount. The ceding insurers will then retain losses in excess of the outstanding coverage limit.

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9. Investment Information

At December 31, 2016, total investable assets of \$20.49 billion included \$18.64 billion held by the Company and \$1.86 billion attributable to Watford Re.

Available For Sale Investments

The following table summarizes the fair value and cost or amortized cost of the Company's securities classified as available for sale:

	Estimated Fair Value	Gross Unrealized Gains	Gross Unrealized Losses	Cost or Amortized Cost	OTTI Unrealized Losses (2)
December 31, 2016					
Fixed maturities (1):					
Corporate bonds	\$ 4,392,373	\$ 27,606	\$ (46,905)	\$ 4,411,672	\$ (2,285)
Mortgage backed securities	490,093	4,794	(8,357)	493,656	(3,323)
Municipal bonds	3,713,434	8,554	(29,154)	3,734,034	(201)
Commercial mortgage backed securities	536,051	2,876	(6,508)	539,683	—
U.S. government and government agencies	2,804,540	9,319	(24,437)	2,819,658	—
Non-U.S. government securities	1,096,440	19,036	(56,872)	1,134,276	—
Asset backed securities	1,123,987	6,897	(6,526)	1,123,616	(22)
Total	14,156,918	79,082	(178,759)	14,256,595	(5,831)
Equity securities	532,680	62,627	(17,517)	487,570	—
Other investments	167,970	21,358	(2,465)	149,077	—
Short-term investments	612,005	272	(145)	611,878	—
Total	\$ 15,469,573	\$ 163,339	\$ (198,886)	\$ 15,505,120	\$ (5,831)
December 31, 2015					
Fixed maturities (1):					
Corporate bonds	\$ 2,725,729	\$ 15,978	\$ (60,508)	\$ 2,770,259	\$ (3,553)
Mortgage backed securities	754,870	9,872	(5,334)	750,332	(3,350)
Municipal bonds	1,626,281	27,014	(1,534)	1,600,801	—
Commercial mortgage backed securities	764,152	3,269	(6,978)	767,861	—
U.S. government and government agencies	2,423,455	6,228	(9,978)	2,427,205	—
Non-U.S. government securities	917,664	10,414	(39,122)	946,372	—
Asset backed securities	1,620,506	3,307	(12,951)	1,630,150	(22)
Total	10,832,657	76,082	(136,405)	10,892,980	(6,925)
Equity securities	629,182	94,341	(17,796)	552,637	—
Other investments	300,476	43,798	(4,665)	261,343	—
Short-term investments	587,904	187	(3,425)	591,142	—
Total	\$ 12,350,219	\$ 214,408	\$ (162,291)	\$ 12,298,102	\$ (6,925)

- (1) In securities lending transactions, the Company receives collateral in excess of the fair value of the fixed maturities pledged. For purposes of this table, the Company has excluded the collateral received under securities lending, at fair value and included the securities pledged under securities lending, at fair value. See "—Securities Lending Agreements."
- (2) Represents the total other-than-temporary impairments ("OTTI") recognized in accumulated other comprehensive income ("AOCI"). It does not include the change in fair value subsequent to the impairment measurement date. At December 31, 2016, the net unrealized gain related to securities for which a non-credit OTTI was recognized in AOCI was \$2.8 million, compared to a net unrealized loss of \$1.4 million at December 31, 2015.

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The following table summarizes, for all available for sale securities in an unrealized loss position, the fair value and gross unrealized loss by length of time the security has been in a continual unrealized loss position:

	Less than 12 Months		12 Months or More		Total	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
December 31, 2016						
Fixed maturities (1):						
Corporate bonds	\$ 1,700,813	\$ (43,011)	\$ 46,902	\$ (3,894)	\$ 1,747,715	\$ (46,905)
Mortgage backed securities	402,699	(8,134)	6,105	(223)	408,804	(8,357)
Municipal bonds	1,513,308	(28,504)	29,636	(650)	1,542,944	(29,154)
Commercial mortgage backed securities	231,374	(6,331)	5,635	(177)	237,009	(6,508)
U.S. government and government agencies	1,888,018	(24,437)	—	—	1,888,018	(24,437)
Non-U.S. government securities	807,598	(56,872)	—	—	807,598	(56,872)
Asset backed securities	627,557	(5,465)	65,723	(1,061)	693,280	(6,526)
Total	7,171,367	(172,754)	154,001	(6,005)	7,325,368	(178,759)
Equity securities	269,381	(17,517)	—	—	269,381	(17,517)
Other investments	39,299	(2,465)	—	—	39,299	(2,465)
Short-term investments	29,146	(145)	—	—	29,146	(145)
Total	\$ 7,509,193	\$ (192,881)	\$ 154,001	\$ (6,005)	\$ 7,663,194	\$ (198,886)
December 31, 2015						
Fixed maturities (1):						
Corporate bonds	\$ 1,810,988	\$ (37,445)	\$ 129,896	\$ (23,063)	\$ 1,940,884	\$ (60,508)
Mortgage backed securities	487,018	(4,508)	48,991	(826)	536,009	(5,334)
Municipal bonds	269,015	(1,303)	9,692	(231)	278,707	(1,534)
Commercial mortgage backed securities	511,261	(6,639)	20,596	(339)	531,857	(6,978)
U.S. government and government agencies	1,991,163	(9,978)	—	—	1,991,163	(9,978)
Non-U.S. government securities	458,414	(13,494)	138,792	(25,628)	597,206	(39,122)
Asset backed securities	1,217,163	(9,328)	134,841	(3,623)	1,352,004	(12,951)
Total	6,745,022	(82,695)	482,808	(53,710)	7,227,830	(136,405)
Equity securities	232,275	(17,796)	—	—	232,275	(17,796)
Other investments	93,614	(4,665)	—	—	93,614	(4,665)
Short-term investments	30,625	(3,425)	—	—	30,625	(3,425)
Total	\$ 7,101,536	\$ (108,581)	\$ 482,808	\$ (53,710)	\$ 7,584,344	\$ (162,291)

(1) In securities lending transactions, the Company receives collateral in excess of the fair value of the fixed maturities pledged. For purposes of this table, the Company has excluded the collateral received and reinvested and included the fixed maturities pledged. See “—Securities Lending Agreements.”

At December 31, 2016, on a lot level basis, approximately 3,540 security lots out of a total of approximately 7,240 security lots were in an unrealized loss position and the largest single unrealized loss from a single lot in the Company’s fixed maturity portfolio was \$4.6 million. The Company believes that such securities were temporarily impaired at December 31, 2016. At December 31, 2015, on a lot level basis, approximately 3,560 security lots out of a total of approximately 5,550 security lots were in an unrealized loss position and the largest single unrealized loss from a single lot in the Company’s fixed maturity portfolio was \$3.1 million.

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The contractual maturities of the Company's fixed maturities and fixed maturities pledged under securities lending agreements are shown in the following table. Expected maturities, which are management's best estimates, will differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

Maturity	December 31, 2016		December 31, 2015	
	Estimated Fair Value	Amortized Cost	Estimated Fair Value	Amortized Cost
Due in one year or less	\$ 560,830	\$ 557,675	\$ 337,898	\$ 341,595
Due after one year through five years	6,158,148	6,211,099	4,644,516	4,677,230
Due after five years through 10 years	4,676,847	4,710,017	2,214,413	2,228,638
Due after 10 years	610,962	620,849	496,302	497,174
	12,006,787	12,099,640	7,693,129	7,744,637
Mortgage backed securities	490,093	493,656	754,870	750,332
Commercial mortgage backed securities	536,051	539,683	764,152	767,861
Asset backed securities	1,123,987	1,123,616	1,620,506	1,630,150
Total	\$ 14,156,918	\$ 14,256,595	\$ 10,832,657	\$ 10,892,980

Securities Lending Agreements

The Company enters into securities lending agreements with financial institutions to enhance investment income whereby it loans certain of its securities to third parties, primarily major brokerage firms, for short periods of time through a lending agent. The Company maintains legal control over the securities it lends, retains the earnings and cash flows associated with the loaned securities and receives a fee from the borrower for the temporary use of the securities. An indemnification agreement with the lending agent protects the Company in the event a borrower becomes insolvent or fails to return any of the securities on loan to the Company.

The Company receives collateral in the form of cash or securities. Cash collateral primarily consists of short-term investments. At December 31, 2016, the fair value of the cash collateral received on securities lending was \$212.4 million and the fair value of security collateral received was \$550.1 million. At December 31, 2015, the fair value of the cash collateral received on securities lending was \$52.7 million, which included \$3.0 million that was reinvested in sub-prime mortgage backed securities, and the fair value of security collateral received was \$336.6 million.

The Company's securities lending transactions were accounted for as secured borrowings with significant investment categories as follows:

	Remaining Contractual Maturity of the Agreements				
	Overnight and Continuous	Less than 30 Days	30-90 Days	90 Days or More	Total
December 31, 2016					
U.S. government and government agencies	\$ 556,015	\$ 31,244	\$ 126,093	\$ 5,140	\$ 718,492
Corporate bonds	29,078	—	—	—	29,078
Equity securities	14,984	—	—	—	14,984
Total	\$ 600,077	\$ 31,244	\$ 126,093	\$ 5,140	\$ 762,554
Gross amount of recognized liabilities for securities lending in offsetting disclosure in Note 11					\$ —
Amounts related to securities lending not included in offsetting disclosure in Note 11					\$ 762,554
December 31, 2015					
U.S. government and government agencies	\$ 235,728	\$ —	\$ 82,286	\$ 9,598	\$ 327,612
Corporate bonds	55,086	—	—	—	55,086
Equity securities	6,722	4,424	—	—	11,146
Total	\$ 297,536	\$ 4,424	\$ 82,286	\$ 9,598	\$ 393,844
Gross amount of recognized liabilities for securities lending in offsetting disclosure in Note 11					\$ —
Amounts related to securities lending not included in offsetting disclosure in Note 11					\$ 393,844

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Other Investments

The following table summarizes the Company's other investments, including available for sale and fair value option components:

	December 31,	
	2016	2015
Available for sale securities:		
Asian and emerging markets	\$ 84,778	\$ 206,861
Investment grade fixed income	33,923	31,370
Credit related funds	7,469	22,512
Other	41,800	39,733
Total available for sale	167,970	300,476
Fair value option:		
Term loan investments (par value: \$1,208,537 and \$1,197,143)	1,190,799	1,108,017
Mezzanine debt funds	127,943	121,589
Credit related funds	218,298	219,049
Investment grade fixed income	75,468	63,053
Asian and emerging markets	178,568	34,761
Other (1)	129,717	124,502
Total fair value option	1,920,793	1,670,971
Total	\$ 2,088,763	\$ 1,971,447

- (1) Includes fund investments with strategies in mortgage servicing rights, transportation and infrastructure assets and other.

Certain of the Company's other investments are in investment funds for which the Company has the option to redeem at agreed upon values as described in each investment fund's subscription agreement. Depending on the terms of the various subscription agreements, investments in investment funds may be redeemed daily, monthly, quarterly or on other terms. Two common redemption restrictions which may impact the Company's ability to redeem these investment funds are gates and lockups. A gate is a suspension of redemptions which may be implemented by the general partner or investment manager of the fund in order to defer, in whole or in part, the redemption request in the event the aggregate amount of redemption requests exceeds a predetermined percentage of the investment fund's net assets which may otherwise hinder the general partner or investment manager's ability to liquidate holdings in an orderly fashion in order to generate the cash necessary to fund extraordinarily large redemption payouts. A lockup period is the initial amount of time an investor is contractually required to hold the security before having the ability to redeem. If the investment funds are eligible to be redeemed, the time to redeem such fund can take weeks or months following the notification.

Fair Value Option

The following table summarizes the Company's assets and liabilities which are accounted for using the fair value option:

	December 31,	
	2016	2015
Fixed maturities	\$ 1,099,116	\$ 936,802
Other investments	1,920,793	1,670,971
Short-term investments	373,669	285,923
Equity securities	27,642	798
Investments accounted for using the fair value option	\$ 3,421,220	\$ 2,894,494

Limited Partnership Interests

In the normal course of its activities, the Company invests in limited partnerships as part of its overall investment strategy. Such amounts are included in 'investments accounted for using the equity method' and 'investments accounted for using the fair value option.' Based on the new accounting guidance for consolidation, the Company determined that these limited partnership interests represented variable interests in the funds because the general partner did not have a significant interest in the funds. The Company's maximum exposure to loss with respect to these investments is limited to the investment carrying amounts reported in the Company's consolidated balance sheet and any unfunded commitment.

The following table summarizes investments in limited partnership interests where the Company has a variable interest by balance sheet item:

	December 31,	
	2016	2015
Investments accounted for using the equity method (1)	\$ 800,970	\$ 584,158
Investments accounted for using the fair value option (2)	90,804	90,969
Total	\$ 891,774	\$ 675,127

- (1) Aggregate unfunded commitments were \$776.6 million at December 31, 2016, compared to \$535.4 million at December 31, 2015.
(2) Aggregate unfunded commitments were \$16.7 million at December 31, 2016, compared to \$22.7 million at December 31, 2015.

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Net Investment Income

The components of net investment income were derived from the following sources:

	Year Ended December 31,		
	2016	2015	2014
Fixed maturities	\$ 295,502	\$ 283,998	\$ 265,219
Term loan investments	92,568	71,120	39,940
Equity securities	12,536	13,534	13,005
Short-term investments	6,071	669	1,888
Other (1)	40,247	41,807	28,869
Gross investment income	446,924	411,128	348,921
Investment expenses	(80,182)	(63,038)	(46,336)
Net investment income	\$ 366,742	\$ 348,090	\$ 302,585

(1) Includes income distributions from investment funds and other items.

Net Realized Gains (Losses)

Net realized gains (losses) were as follows, excluding the other-than-temporary impairment provisions:

	Year Ended December 31,		
	2016	2015	2014
Available for sale securities:			
Gross gains on investment sales	\$ 309,896	\$ 281,786	\$ 248,031
Gross losses on investment sales	(214,447)	(218,970)	(145,808)
Change in fair value of assets and liabilities accounted for using the fair value option:			
Fixed maturities	47,890	(84,620)	(20,743)
Other investments	58,687	(122,171)	2,672
Equity securities	366	(85)	—
Short-term investments	93	1,462	(395)
Derivative instruments (1)	(22,612)	(7,114)	43,934
Other (2)	(42,287)	(36,130)	(24,774)
Net realized gains (losses)	\$ 137,586	\$ (185,842)	\$ 102,917

- (1) See Note 11 for information on the Company's derivative instruments.
(2) Includes the re-measurement of contingent consideration liability amounts.

Equity in Net Income (Loss) of Investment Funds Accounted For Using the Equity Method

The Company recorded equity in net income related to investment funds accounted for using the equity method of \$48.5 million for 2016, compared to \$25.5 million for 2015 and \$19.9 million for 2014. In applying the equity method, investments are initially recorded at cost and are subsequently adjusted based on the Company's proportionate share of the net income or loss of the funds (which include changes in the fair

value of the underlying securities in the funds). Such investments are generally recorded on a one month lag with some investments reported on a three month lag based on the availability of reports from the investment funds.

Other-Than-Temporary Impairments

The Company performs quarterly reviews of its available for sale investments in order to determine whether declines in fair value below the amortized cost basis were considered other-than-temporary in accordance with applicable guidance.

The following table details the net impairment losses recognized in earnings by asset class:

	Year Ended December 31,		
	2016	2015	2014
Fixed maturities:			
Mortgage backed securities	\$ (964)	\$ (1,794)	\$ (1,525)
Corporate bonds	(5,674)	(10,841)	(2,062)
Non-U.S. government securities	(823)	—	—
Commercial mortgage backed securities	—	—	(7)
Asset backed securities	(14,736)	—	(40)
Municipal bonds	(726)	—	—
Total	(22,923)	(12,635)	(3,634)
Short-term investments	—	(2,341)	—
Equity securities	(3,990)	(4,206)	(1,106)
Other investments	(3,529)	(934)	(25,410)
Net impairment losses recognized in earnings	\$ (30,442)	\$ (20,116)	\$ (30,150)

A description of the methodology and significant inputs used to measure the amount of net impairment losses recognized in earnings in 2016 is as follows:

- Asset backed securities – the Company utilized underlying data provided by asset managers, cash flow projections and additional information from credit agencies in order to determine an expected recovery value for each security. Impairment losses primarily reflected reductions in two securities following an analysis of expected cash flows;
- Corporate bonds – the Company reviewed the business prospects, credit ratings, estimated loss given default factors, foreign currency impacts and information received from asset managers and rating agencies for certain corporate bonds. Impairment losses primarily resulted from reductions on non-investment grade corporate bonds in the energy sector, reflecting current market conditions;
- Equity securities – the Company utilized information received from asset managers on common stocks, including the business prospects, recent events, industry and market data and other factors. Impairment losses were

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primarily on equities which were in an unrealized loss position for a significant length of time;

- Other investments – the Company utilized information received from fund managers and positive and negative evidence, including the business prospects, recent events, industry and market data and other factors. Impairment losses reflected a reduction on certain funds which were in an unrealized loss position for a significant length of time.

The Company believes that the \$5.8 million of OTTI included in accumulated other comprehensive income at December 31, 2016 on the securities which were considered by the Company to be impaired was due to market and sector-related factors (*i.e.*, not credit losses). At December 31, 2016, the Company did not intend to sell these securities, or any other securities which were in an unrealized loss position, and determined that it is more likely than not that the Company will not be required to sell such securities before recovery of their cost basis.

The following table provides a roll forward of the amount related to credit losses recognized in earnings for which a portion of an OTTI was recognized in accumulated other comprehensive income:

	Year Ended December 31,		
	2016	2015	2014
Balance at start of year	\$ 26,875	\$ 20,196	\$ 60,062
Credit loss impairments recognized on securities not previously impaired	2,186	12,777	691
Credit loss impairments recognized on securities previously impaired	582	1,673	162
Reductions for increases in cash flows expected to be collected that are recognized over the remaining life of the security	—	—	—
Reductions for securities sold during the period	(16,505)	(7,771)	(40,719)
Balance at end of year	\$ 13,138	\$ 26,875	\$ 20,196

Restricted Assets

The Company is required to maintain assets on deposit, which primarily consist of fixed maturities, with various regulatory authorities to support its insurance and reinsurance operations. The Company's insurance and reinsurance subsidiaries maintain assets in trust accounts as collateral for insurance and reinsurance transactions with affiliated companies and also have investments in segregated portfolios primarily to provide collateral or guarantees for letters of credit to third parties. See Note 16 for further details.

The following table details the value of the Company's restricted assets:

	December 31,	
	2016	2015
Assets used for collateral or guarantees:		
Affiliated transactions	\$ 3,871,971	\$ 3,810,104
Third party agreements	1,513,079	1,286,257
Deposits with U.S. regulatory authorities	472,890	391,458
Deposits with non-U.S. regulatory authorities	44,399	38,230
Total restricted assets	\$ 5,902,339	\$ 5,526,049

10. Fair Value

Accounting guidance regarding fair value measurements addresses how companies should measure fair value when they are required to use a fair value measure for recognition or disclosure purposes under GAAP and provides a common definition of fair value to be used throughout GAAP. It defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly fashion between market participants at the measurement date. In addition, it establishes a three-level valuation hierarchy for the disclosure of fair value measurements. The valuation hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The level in the hierarchy within which a given fair value measurement falls is determined based on the lowest level input that is significant to the measurement (Level 1 being the highest priority and Level 3 being the lowest priority).

The levels in the hierarchy are defined as follows:

- Level 1: Inputs to the valuation methodology are observable inputs that reflect quoted prices (unadjusted) for *identical* assets or liabilities in *active markets*
- Level 2: Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument
- Level 3: Inputs to the valuation methodology are unobservable and significant to the fair value measurement

Following is a description of the valuation methodologies used for securities measured at fair value, as well as the general classification of such securities pursuant to the valuation hierarchy. The Company reviews its securities measured at fair value and discusses the proper classification of such investments with investment advisers and others.

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The Company determines the existence of an active market based on its judgment as to whether transactions for the financial instrument occur in such market with sufficient frequency and volume to provide reliable pricing information. The independent pricing sources obtain market quotations and actual transaction prices for securities that have quoted prices in active markets. The Company uses quoted values and other data provided by nationally recognized independent pricing sources as inputs into its process for determining fair values of its fixed maturity investments. To validate the techniques or models used by pricing sources, the Company's review process includes, but is not limited to: (i) quantitative analysis (e.g., comparing the quarterly return for each managed portfolio to its target benchmark, with significant differences identified and investigated); (ii) a review of the average number of prices obtained in the pricing process and the range of resulting fair values; (iii) initial and ongoing evaluation of methodologies used by outside parties to calculate fair value; (iv) a comparison of the fair value estimates to the Company's knowledge of the current market; (v) a comparison of the pricing services' fair values to other pricing services' fair values for the same investments; and (vi) periodic back-testing, which includes randomly selecting purchased or sold securities and comparing the executed prices to the fair value estimates from the pricing service. A price source hierarchy was maintained in order to determine which price source would be used (*i.e.*, a price obtained from a pricing service with more seniority in the hierarchy will be used over a less senior one in all cases). The hierarchy prioritizes pricing services based on availability and reliability and assigns the highest priority to index providers. Based on the above review, the Company will challenge any prices for a security or portfolio which are considered not to be representative of fair value. For a limited number of securities, the Company substituted prices from the independent pricing sources at December 31, 2016 and utilized prices received from broker-dealers.

In certain circumstances, when fair values are unavailable from these independent pricing sources, quotes are obtained directly from broker-dealers who are active in the corresponding markets. Such quotes are subject to the validation procedures noted above. Of the \$19.1 billion of financial assets and liabilities measured at fair value at December 31, 2016, approximately \$234.0 million, or 1.2%, were priced using non-binding broker-dealer quotes. Of the \$15.4 billion of financial assets and liabilities measured at fair value at December 31, 2015, approximately \$317.8 million, or 2.1%, were priced using non-binding broker-dealer quotes.

Fixed maturities

The Company uses the market approach valuation technique to estimate the fair value of its fixed maturity securities, when possible. The market approach includes obtaining prices from independent pricing services, such as index providers and pricing vendors, as well as to a lesser extent quotes from broker-

dealers. The independent pricing sources obtain market quotations and actual transaction prices for securities that have quoted prices in active markets. Each source has its own proprietary method for determining the fair value of securities that are not actively traded. In general, these methods involve the use of "matrix pricing" in which the independent pricing source uses observable market inputs including, but not limited to, investment yields, credit risks and spreads, benchmarking of like securities, broker-dealer quotes, reported trades and sector groupings to determine a reasonable fair value. The following describes the significant inputs generally used to determine the fair value of the Company's fixed maturity securities by asset class:

- U.S. government and government agencies — valuations provided by independent pricing services, with all prices provided through index providers and pricing vendors. The Company determined that all U.S. Treasuries would be classified as Level 1 securities due to observed levels of trading activity, the high number of strongly correlated pricing quotes received on U.S. Treasuries and other factors. The fair values of U.S. government agency securities are generally determined using the spread above the risk-free yield curve. As the yields for the risk-free yield curve and the spreads for these securities are observable market inputs, the fair values of U.S. government agency securities are classified within Level 2.
- Corporate bonds — valuations provided by independent pricing services, substantially all through index providers and pricing vendors with a small amount through broker-dealers. The fair values of these securities are generally determined using the spread above the risk-free yield curve. These spreads are generally obtained from the new issue market, secondary trading and from broker-dealers who trade in the relevant security market. As the significant inputs used in the pricing process for corporate bonds are observable market inputs, the fair value of these securities are classified within Level 2. One security is included in Level 3 due to a low level of transparency on the inputs used in the pricing process.
- Mortgage-backed securities — valuations provided by independent pricing services, substantially all through pricing vendors and index providers with a small amount through broker-dealers. The fair values of these securities are generally determined through the use of pricing models (including Option Adjusted Spread) which use spreads to determine the expected average life of the securities. These spreads are generally obtained from the new issue market, secondary trading and from broker-dealers who trade in the relevant security market. The pricing services also review prepayment speeds and other indicators, when applicable. As the significant inputs used in the pricing process for mortgage-backed securities are observable market inputs, the fair value of these securities are classified within Level 2.
- Municipal bonds — valuations provided by independent pricing services, with all prices provided through index

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providers and pricing vendors. The fair values of these securities are generally determined using spreads obtained from broker-dealers who trade in the relevant security market, trade prices and the new issue market. As the significant inputs used in the pricing process for municipal bonds are observable market inputs, the fair value of these securities are classified within Level 2.

- Commercial mortgage-backed securities — valuations provided by independent pricing services, substantially all through index providers and pricing vendors with a small amount through broker-dealers. The fair values of these securities are generally determined through the use of pricing models which use spreads to determine the appropriate average life of the securities. These spreads are generally obtained from the new issue market, secondary trading and from broker-dealers who trade in the relevant security market. The pricing services also review prepayment speeds and other indicators, when applicable. As the significant inputs used in the pricing process for commercial mortgage-backed securities are observable market inputs, the fair value of these securities are classified within Level 2.

- Non-U.S. government securities — valuations provided by independent pricing services, with all prices provided through index providers and pricing vendors. The fair values of these securities are generally based on international indices or valuation models which include daily observed yield curves, cross-currency basis index spreads and country credit spreads. As the significant inputs used in the pricing process for non-U.S. government securities are observable market inputs, the fair value of these securities are classified within Level 2.

- Asset-backed securities — valuations provided by independent pricing services, substantially all through index providers and pricing vendors with a small amount through broker-dealers. The fair values of these securities are generally determined through the use of pricing models (including Option Adjusted Spread) which use spreads to determine the appropriate average life of the securities. These spreads are generally obtained from the new issue market, secondary trading and from broker-dealers who trade in the relevant security market. The pricing services also review prepayment speeds and other indicators, when applicable. As the significant inputs used in the pricing process for asset-backed securities are observable market inputs, the fair value of these securities are classified within Level 2. A small number of securities are included in Level 3 due to a low level of transparency on the inputs used in the pricing process.

Equity securities

The Company determined that exchange-traded equity securities would be included in Level 1 as their fair values are based on quoted market prices in active markets. Other equity securities are included in Level 2 of the valuation hierarchy.

Other investments

The Company determined that exchange-traded investments would be included in Level 1 as their fair values are based on quoted market prices in active markets. Other investments also include term loan investments for which fair values are estimated by using quoted prices of term loan investments with similar characteristics, pricing models or matrix pricing. Such investments are generally classified within Level 2. A small number of securities are included in Level 3 due to a low level of transparency on the inputs used in the pricing process. The fair values for certain of the Company's other investments are determined using net asset values as advised by external fund managers. The net asset value is based on the fund manager's valuation of the underlying holdings in accordance with the fund's governing documents. In accordance with applicable accounting guidance, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. During 2016, the Company transferred \$25.0 million of other investments from Level 2 to Level 3 based on a review of the pricing of such securities, as described above.

Derivative instruments

The Company's futures contracts, foreign currency forward contracts, interest rate swaps and other derivatives trade in the over-the-counter derivative market. The Company uses the market approach valuation technique to estimate the fair value for these derivatives based on significant observable market inputs from third party pricing vendors, non-binding broker-dealer quotes and/or recent trading activity. As the significant inputs used in the pricing process for these derivative instruments are observable market inputs, the fair value of these securities are classified within Level 2.

Short-term investments

The Company determined that certain of its short-term investments held in highly liquid money market-type funds, Treasury bills and commercial paper would be included in Level 1 as their fair values are based on quoted market prices in active markets. The fair values of other short-term investments are generally determined using the spread above the risk-free yield curve and are classified within Level 2.

Contingent consideration liabilities

Contingent consideration liabilities (included in 'other liabilities' in the consolidated balance sheets) include amounts related to the Company's 2014 acquisition of CMG Mortgage Insurance Company and its affiliated mortgage insurance companies (the "CMG Entities") and other acquisitions. Such amounts are remeasured at fair value at each balance sheet date with changes in fair value recognized in 'net realized gains (losses).' To determine the fair value of contingent consideration liabilities, the Company estimates future

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payments using an income approach based on modeled inputs which include a weighted average cost of capital. The Company

determined that contingent consideration liabilities would be included within Level 3.

The following table presents the Company's financial assets and liabilities measured at fair value by level at December 31, 2016:

	Estimated Fair Value	Fair Value Measurement Using:		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<u>Assets measured at fair value:</u>				
Available for sale securities:				
Fixed maturities (1):				
Corporate bonds	\$ 4,392,373	\$ —	\$ 4,374,029	\$ 18,344
Mortgage backed securities	490,093	—	490,093	—
Municipal bonds	3,713,434	—	3,713,434	—
Commercial mortgage backed securities	536,051	—	536,051	—
U.S. government and government agencies	2,804,540	2,691,575	112,965	—
Non-U.S. government securities	1,096,440	—	1,096,440	—
Asset backed securities	1,123,987	—	1,112,698	11,289
Total	14,156,918	2,691,575	11,435,710	29,633
Equity securities	532,680	529,695	2,985	—
Short-term investments	612,005	608,862	3,143	—
Other investments	112,313	112,313	—	—
Other investments measured at net asset value (2)	55,657	—	—	—
Total other investments	167,970	112,313	—	—
Derivative instruments (4)	28,410	—	28,410	—
Fair value option:				
Corporate bonds	790,935	—	790,935	—
Non-U.S. government bonds	61,747	—	61,747	—
Mortgage backed securities	18,624	—	18,624	—
Asset backed securities	30,324	—	30,324	—
U.S. government and government agencies	197,486	197,486	—	—
Short-term investments	373,669	309,127	64,542	—
Equity securities	27,642	25,328	2,314	—
Other investments	1,226,242	80,706	1,120,536	25,000
Other investments measured at net asset value (2)	694,551	—	—	—
Total	3,421,220	612,647	2,089,022	25,000
Total assets measured at fair value	\$ 18,919,203	\$ 4,555,092	\$ 13,559,270	\$ 54,633
<u>Liabilities measured at fair value:</u>				
Contingent consideration liabilities	\$ (122,350)	\$ —	\$ —	\$ (122,350)
Securities sold but not yet purchased (3)	(33,157)	—	(33,157)	—
Derivative instruments (4)	(26,049)	—	(26,049)	—
Total liabilities measured at fair value	\$ (181,556)	\$ —	\$ (59,206)	\$ (122,350)

- (1) In securities lending transactions, the Company receives collateral in excess of the fair value of the securities pledged. For purposes of this table, the Company has excluded the collateral received under securities lending, at fair value and included the securities pledged under securities lending, at fair value. See Note 9, "Investment Information—Securities Lending Agreements."
- (2) In accordance with applicable accounting guidance, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheets.
- (3) Represents the Company's obligations to deliver securities that it did not own at the time of sale. Such amounts are included in "other liabilities" on the Company's consolidated balance sheets.
- (4) See Note 11, "Derivative Instruments."

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The following table presents the Company's financial assets and liabilities measured at fair value by level at December 31, 2015:

	Estimated Fair Value	Fair Value Measurement Using:		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<u>Assets measured at fair value:</u>				
Available for sale securities:				
Fixed maturities (1):				
Corporate bonds	\$ 2,725,729	\$ —	\$ 2,709,361	\$ 16,368
Mortgage backed securities	754,870	—	754,870	—
Municipal bonds	1,626,281	—	1,626,281	—
Commercial mortgage backed securities	764,152	—	764,152	—
U.S. government and government agencies	2,423,455	2,378,662	44,793	—
Non-U.S. government securities	917,664	—	917,664	—
Asset backed securities	1,620,506	—	1,563,006	57,500
Total	10,832,657	2,378,662	8,380,127	73,868
Equity securities	629,182	627,441	1,741	—
Short-term investments	587,904	572,604	15,300	—
Other investments	99,159	99,159	—	—
Other investments measured at net asset value (2)	201,317	—	—	—
Total other investments	300,476	99,159	—	—
Derivative instruments (4)	20,022	—	20,022	—
Fair value option:				
Corporate bonds	771,733	—	771,733	—
Non-U.S. government bonds	81,824	—	81,824	—
Mortgage backed securities	57,687	—	57,687	—
Asset backed securities	25,444	—	25,444	—
U.S. government and government agencies	114	114	—	—
Short-term investments	285,923	285,923	—	—
Equity securities	798	798	—	—
Other investments	1,176,312	68,295	1,108,017	—
Other investments measured at net asset value (2)	494,659	—	—	—
Total	2,894,494	355,130	2,044,705	—
Total assets measured at fair value	\$ 15,264,735	\$ 4,032,996	\$ 10,461,895	\$ 73,868
<u>Liabilities measured at fair value:</u>				
Contingent consideration liabilities	\$ (96,048)	\$ —	\$ —	\$ (96,048)
Securities sold but not yet purchased (3)	(30,583)	—	(30,583)	—
Derivative instruments (4)	(11,863)	—	(11,863)	—
Total liabilities measured at fair value	\$ (138,494)	\$ —	\$ (42,446)	\$ (96,048)

- (1) In securities lending transactions, the Company receives collateral in excess of the fair value of the securities pledged. For purposes of this table, the Company has excluded the collateral received under securities lending, at fair value and included the securities pledged under securities lending, at fair value. See Note 9, "Investment Information—Securities Lending Agreements."
- (2) In accordance with applicable accounting guidance, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheets.
- (3) Represents the Company's obligations to deliver securities that it did not own at the time of sale. Such amounts are included in "other liabilities" on the Company's consolidated balance sheets.
- (4) See Note 11, "Derivative Instruments."

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The following table presents a reconciliation of the beginning and ending balances for all financial assets and liabilities measured at fair value on a recurring basis using Level 3 inputs for 2016 and 2015:

	Assets				Liabilities
	Available For Sale		Fair Value Option	Total	Contingent Consideration Liabilities
	Asset Backed Securities	Corporate Bonds	Other Investments		
Year Ended December 31, 2016					
Balance at beginning of year	\$ 57,500	\$ 16,368	\$ —	\$ 73,868	\$ (96,048)
Total gains or (losses) (realized/unrealized)					
Included in earnings (1)	(14,730)	1,200	—	(13,530)	(26,912)
Included in other comprehensive income	—	—	—	—	74
Purchases, issuances, sales and settlements					
Purchases	—	776	—	776	—
Issuances	—	—	—	—	—
Sales	—	—	—	—	—
Settlements	(31,481)	—	—	(31,481)	536
Transfers in and/or out of Level 3	—	—	25,000	25,000	—
Balance at end of year	<u>\$ 11,289</u>	<u>\$ 18,344</u>	<u>\$ 25,000</u>	<u>\$ 54,633</u>	<u>\$ (122,350)</u>
Year Ended December 31, 2015					
Balance at beginning of year	\$ 57,500	\$ —	\$ —	\$ 57,500	\$ (61,845)
Total gains or (losses) (realized/unrealized)					
Included in earnings (1)	—	—	—	—	(33,135)
Included in other comprehensive income	—	—	—	—	—
Purchases, issuances, sales and settlements					
Purchases	—	—	—	—	—
Issuances	—	—	—	—	(1,068)
Sales	—	—	—	—	—
Settlements	—	—	—	—	—
Transfers in and/or out of Level 3	—	16,368	—	16,368	—
Balance at end of year	<u>\$ 57,500</u>	<u>\$ 16,368</u>	<u>\$ —</u>	<u>\$ 73,868</u>	<u>\$ (96,048)</u>

- (1) Gains or losses on asset backed securities were included in net impairment losses recognized in earnings while gains or losses on corporate bonds and contingent consideration liabilities were included in net realized gains (losses).

Financial Instruments Disclosed, But Not Carried, At Fair Value

The Company uses various financial instruments in the normal course of its business. The carrying values of cash, accrued investment income, receivable for securities sold, certain other assets, payable for securities purchased and certain other liabilities approximated their fair values at December 31, 2016, due to their respective short maturities. As these financial instruments are not actively traded, their respective fair values are classified within Level 2.

At December 31, 2016, the 2034 senior notes of ACGL were carried at their cost, net of debt issuance costs, of \$297.0 million and had a fair value of \$392.0 million, while the 2043 senior notes of Arch-U.S. were carried at their cost, net of debt issuance costs, of \$494.5 million and had a fair value of \$521.6 million. The 2026 senior notes of Arch Finance were carried at their cost, net of debt issuance costs, of \$495.7 million and had a fair value of \$509.3 million, while the 2046 senior notes were

carried at their cost, net of debt issuance costs, of \$445.1 million and had a fair value of \$476.0 million. The fair values of the senior notes were obtained from a third party pricing service and are based on observable market inputs. As such, the fair value of the senior notes is classified within Level 2.

Fair Value Measurements on a Non-Recurring Basis

The Company measures the fair value of certain assets on a non-recurring basis, generally quarterly, annually, or when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. These assets include investment funds accounted for using the equity method, certain other investments, goodwill and intangible assets, and long-lived assets. The Company uses a variety of techniques to measure the fair value of these assets when appropriate, as described below:

Investments accounted for using the equity method. When the Company determines that the carrying value of these assets may

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not be recoverable, the Company records the assets at fair value with the loss recognized in income. In such cases, the Company measures the fair value of these assets using the techniques discussed above in “—Fair Value Measurements on a Recurring Basis.”

Goodwill and Intangible Assets. The Company tests goodwill and intangible assets for impairment whenever events or changes in circumstances indicate the carrying amount may not be recoverable. When the Company determines goodwill and intangible assets may be impaired, the Company uses techniques including discounted expected future cash flows, to measure fair value.

Long-Lived Assets. The Company tests its long-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of a long-lived asset may not be recoverable.

11. Derivative Instruments

The Company’s investment strategy allows for the use of derivative instruments. The Company’s derivative instruments are recorded on its consolidated balance sheets at fair value. The Company utilizes exchange traded U.S. Treasury note, Eurodollar and other futures contracts and commodity futures to manage portfolio duration or replicate investment positions in its portfolios and the Company routinely utilizes foreign currency forward contracts, currency options, index futures contracts and other derivatives as part of its total return objective. In addition, certain of the Company’s investments are managed in portfolios which incorporate the use of foreign currency forward contracts which are intended to provide an economic hedge against foreign currency movements.

In addition, the Company purchases to-be-announced mortgage backed securities (“TBAs”) as part of its investment strategy. TBAs represent commitments to purchase a future issuance of agency mortgage backed securities. For the period between purchase of a TBA and issuance of the underlying security, the Company’s position is accounted for as a derivative. The Company purchases TBAs in both long and short positions to enhance investment performance and as part of its overall investment strategy.

The following table summarizes information on the fair values and notional values of the Company’s derivative instruments:

	Estimated Fair Value		
	Asset Derivatives	Liability Derivatives	Notional Value (1)
<u>December 31, 2016</u>			
Futures contracts (2)	\$ 360	\$ (9,398)	\$ 1,655,530
Foreign currency forward contracts (2)	9,354	(12,941)	1,186,386
TBAs (3)	—	—	—
Other (2)	20,287	(3,710)	1,014,863
Total	<u>\$ 30,001</u>	<u>\$ (26,049)</u>	
<u>December 31, 2015</u>			
Futures contracts (2)	\$ 2,816	\$ (1,202)	\$ 1,797,115
Foreign currency forward contracts (2)	9,336	(6,344)	773,619
TBAs (3)	6,525	—	6,316
Other (2)	7,870	(4,317)	1,694,935
Total	<u>\$ 26,547</u>	<u>\$ (11,863)</u>	

- (1) Represents the absolute notional value of all outstanding contracts, consisting of long and short positions.
- (2) The fair value of asset derivatives are included in ‘other assets’ and the fair value of liability derivatives are included in ‘other liabilities.’ Such amounts include risk in force on GSE credit-risk sharing transactions that are accounted for as derivatives.
- (3) The fair value of TBAs are included in ‘fixed maturities available for sale, at fair value.’

The Company did not hold any derivatives which were designated as hedging instruments at December 31, 2016 or 2015.

The Company’s derivative instruments can be traded under master netting agreements, which establish terms that apply to all derivative transactions with a counterparty. In the event of a bankruptcy or other stipulated event of default, such agreements provide that the non-defaulting party may elect to terminate all outstanding derivative transactions, in which case all individual derivative positions (loss or gain) with a counterparty are closed out and netted and replaced with a single amount, usually referred to as the termination amount, which is expressed in a single currency. The resulting single net amount, where positive, is payable to the party “in-the-money” regardless of whether or not it is the defaulting party, unless the parties have agreed that only the non-defaulting party is entitled to receive a termination payment where the net amount is positive and is in its favor. Effectively, contractual close-out netting reduces derivatives credit exposure from gross to net exposure. At December 31, 2016, \$28.4 million and \$26.0 million, respectively, of asset derivatives and liability derivatives were subject to a master netting agreement compared to \$26.5 million and \$11.9 million, respectively, at December 31, 2015. The remaining derivatives

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included in the table above were not subject to a master netting agreement.

All realized and unrealized contract gains and losses on the Company's derivative instruments are reflected in net realized gains (losses) in the consolidated statements of income, as summarized in the following table:

Derivatives not designated as hedging instruments	Year Ended December 31,		
	2016	2015	2014
Net realized gains (losses):			
Futures contracts	\$ (5,474)	\$ (21,533)	\$ 30,444
Foreign currency forward contracts	(9,588)	16,045	13,430
TBAAs	577	1,452	(342)
Other	(8,127)	(3,078)	402
Total	<u>\$ (22,612)</u>	<u>\$ (7,114)</u>	<u>\$ 43,934</u>

12. Other Comprehensive Income (Loss)

The following table presents the changes in each component of accumulated other comprehensive income ("AOCT"), net of noncontrolling interests:

	Unrealized Appreciation on Available-For-Sale Investments	Foreign Currency Translation Adjustments	Total
Year Ended December 31, 2016			
Beginning balance	\$ 50,085	\$ (66,587)	\$ (16,502)
Other comprehensive income (loss) before reclassifications	(21,365)	(20,313)	(41,678)
Amounts reclassified from accumulated other comprehensive income	(56,361)	—	(56,361)
Net current period other comprehensive income (loss)	(77,726)	(20,313)	(98,039)
Ending balance	<u>\$ (27,641)</u>	<u>\$ (86,900)</u>	<u>\$ (114,541)</u>
Year Ended December 31, 2015			
Beginning balance	\$ 161,598	\$ (32,742)	\$ 128,856
Other comprehensive income (loss) before reclassifications	(83,280)	(33,845)	(117,125)
Amounts reclassified from accumulated other comprehensive income	(28,233)	—	(28,233)
Net current period other comprehensive income (loss)	(111,513)	(33,845)	(145,358)
Ending balance	<u>\$ 50,085</u>	<u>\$ (66,587)</u>	<u>\$ (16,502)</u>
Year Ended December 31, 2014			
Beginning balance	\$ 80,692	\$ (5,728)	\$ 74,964
Other comprehensive income (loss) before reclassifications	146,010	(27,014)	118,996
Amounts reclassified from accumulated other comprehensive income	(65,104)	—	(65,104)
Net current period other comprehensive income (loss)	80,906	(27,014)	53,892
Ending balance	<u>\$ 161,598</u>	<u>\$ (32,742)</u>	<u>\$ 128,856</u>

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The following tables present details about amounts reclassified from accumulated other comprehensive income and the tax effects allocated to each component of other comprehensive income (loss):

Details About AOCI Components	Consolidated Statement of Income Line Item That Includes Reclassification	Amounts Reclassified from AOCI		
		Year Ended December 31,		
		2016	2015	2014
Unrealized appreciation on	available-for-sale investments			
	Net realized gains	\$ 95,448	\$ 62,817	\$ 102,223
	Other-than-temporary impairment losses	(30,794)	(26,152)	(30,470)
	Total before tax	64,654	36,665	71,753
	Income tax (expense) benefit	(8,293)	(8,432)	(6,649)
	Net of tax	\$ 56,361	\$ 28,233	\$ 65,104

Following are the related tax effects allocated to each component of other comprehensive income (loss):

	Before Tax Amount	Tax Expense (Benefit)	Net of Tax Amount
Year Ended December 31, 2016			
Unrealized appreciation (decline) in value of investments:			
Unrealized holding gains (losses) arising during period	\$ (26,159)	\$ (5,146)	\$ (21,013)
Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss)	(352)	—	(352)
Less reclassification of net realized gains (losses) included in net income	64,654	8,293	56,361
Foreign currency translation adjustments	(20,120)	261	(20,381)
Other comprehensive income (loss)	\$ (111,285)	\$ (13,178)	\$ (98,107)
Year Ended December 31, 2015			
Unrealized appreciation (decline) in value of investments:			
Unrealized holding gains (losses) arising during period	\$ (77,311)	\$ (67)	\$ (77,244)
Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss)	(6,036)	—	(6,036)
Less reclassification of net realized gains (losses) included in net income	36,665	8,432	28,233
Foreign currency translation adjustments	(35,679)	(1,568)	(34,111)
Other comprehensive income (loss)	\$ (155,691)	\$ (10,067)	\$ (145,624)
Year Ended December 31, 2014			
Unrealized appreciation (decline) in value of investments:			
Unrealized holding gains (losses) arising during period	\$ 161,685	\$ 15,355	\$ 146,330
Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss)	(320)	—	(320)
Less reclassification of net realized gains (losses) included in net income	71,753	6,649	65,104
Foreign currency translation adjustments	(27,014)	—	(27,014)
Other comprehensive income (loss)	\$ 62,598	\$ 8,706	\$ 53,892

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13. Earnings Per Common Share

The calculation of basic earnings per common share is computed by dividing income available to Arch common shareholders by the weighted average number of Common Shares, including the weighted effect of 12,762,820 common shares that the Series D Preferred securities convert to. The following table sets forth the computation of basic and diluted earnings per common share:

	Year Ended December 31,		
	2016	2015	2014
Numerator:			
Net income	\$ 824,178	\$ 526,582	\$ 821,260
Amounts attributable to noncontrolling interests	(131,440)	11,156	13,095
Net income available to Arch	692,738	537,738	834,355
Preferred dividends	(28,070)	(21,938)	(21,938)
Net income available to Arch common shareholders	\$ 664,668	\$ 515,800	\$ 812,417
Denominator:			
Weighted average common shares outstanding	120,757,243	121,786,127	130,817,610
Series D preferred securities (1)	34,871	—	—
Weighted average common shares outstanding – basic	120,792,114	121,786,127	130,817,610
Effect of dilutive common share equivalents:			
Nonvested restricted shares	1,292,359	1,253,938	1,128,540
Stock options (2)	2,633,020	2,998,678	2,976,172
Weighted average common shares and common share equivalents outstanding – diluted	124,717,493	126,038,743	134,922,322
Earnings per common share:			
Basic	\$ 5.50	\$ 4.24	\$ 6.21
Diluted	\$ 5.33	\$ 4.09	\$ 6.02

- (1) The company has determined that, based on a review of the terms, features and rights of the Company's non-voting common equivalent preferred shares compared to the rights of the Company's common shareholders, the underlying 12,762,820 common shares that the convertible securities convert to were common share equivalents at the time of their issuance.
- (2) Certain stock options were not included in the computation of diluted earnings per share where the exercise price of the stock options exceeded the average market price and would have been anti-dilutive or where, when applying the treasury stock method to in-the-money options, the sum of the proceeds, including unrecognized compensation, exceeded the average market price and would have been anti-dilutive. For 2016, 2015 and 2014, the number of stock options excluded were 722,729, 799,535 and 1,435,955, respectively.

14. Income Taxes

ACGL is incorporated under the laws of Bermuda and, under current Bermuda law, is not obligated to pay any taxes in Bermuda based upon income or capital gains. The Company has received a written undertaking from the Minister of Finance in Bermuda under the Exempted Undertakings Tax Protection Act 1966 that, in the event that any legislation is enacted in Bermuda imposing any tax computed on profits, income, gain or appreciation on any capital asset, or any tax in the nature of estate duty or inheritance tax, such tax will not be applicable to ACGL or any of its operations until March 31, 2035. This undertaking does not, however, prevent the imposition of taxes on any person ordinarily resident in Bermuda or any company in respect of its ownership of real property or leasehold interests in Bermuda.

ACGL and its non-U.S. subsidiaries will be subject to U.S. federal income tax only to the extent that they derive U.S. source income that is subject to U.S. withholding tax or income that is effectively connected with the conduct of a trade or business within the U.S. and is not exempt from U.S. tax under an applicable income tax treaty with the U.S. ACGL and its non-U.S. subsidiaries will be subject to a withholding tax on dividends from U.S. investments and interest from certain U.S. payors (subject to reduction by any applicable income tax treaty). ACGL and its non-U.S. subsidiaries intend to conduct their operations in a manner that will not cause them to be treated as engaged in a trade or business in the United States and, therefore, will not be required to pay U.S. federal income taxes (other than U.S. excise taxes on insurance and reinsurance premium and withholding taxes on dividends and certain other U.S. source investment income). However, because there is uncertainty as to the activities which constitute being engaged in a trade or business within the United States, there can be no

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assurances that the U.S. Internal Revenue Service will not contend successfully that ACGL or its non-U.S. subsidiaries are engaged in a trade or business in the United States. If ACGL or any of its non-U.S. subsidiaries were subject to U.S. income tax, ACGL's shareholders' equity and earnings could be materially adversely affected. ACGL has subsidiaries and branches that operate in various jurisdictions around the world that are subject to tax in the jurisdictions in which they operate. The significant jurisdictions in which ACGL's subsidiaries and branches are subject to tax are the United States, United Kingdom, Ireland, Canada, Switzerland, Australia and Denmark.

The components of income taxes attributable to operations were as follows:

	Year Ended December 31,		
	2016	2015	2014
Current expense (benefit):			
United States	\$ 40,300	\$ 37,186	\$ 29,749
Non-U.S.	10,445	7,008	801
	50,745	44,194	30,550
Deferred expense (benefit):			
United States	(14,641)	(4,893)	(8,168)
Non-U.S.	(4,730)	1,311	605
	(19,371)	(3,582)	(7,563)
Income tax expense	\$ 31,374	\$ 40,612	\$ 22,987

The Company's income or loss before income taxes was earned in the following jurisdictions:

	Year Ended December 31,		
	2016	2015	2014
Income Before Income Taxes:			
Bermuda	\$ 801,155	\$ 508,561	\$ 794,926
United States	51,577	57,527	53,055
Other	2,820	1,106	(3,734)
Total	\$ 855,552	\$ 567,194	\$ 844,247

The expected tax provision computed on pre-tax income or loss at the weighted average tax rate has been calculated as the sum of the pre-tax income in each jurisdiction multiplied by that jurisdiction's applicable statutory tax rate. The statutory tax rates by jurisdiction were as follows: Bermuda (0.0%), United States (35.0%), United Kingdom (20.00%), Ireland (12.5%), Denmark (22.0%), Canada (26.5%), Gibraltar (10.0%), Australia (30.0%) and the Netherlands (25.0%).

A reconciliation of the difference between the provision for income taxes and the expected tax provision at the weighted average tax rate follows:

	Year Ended December 31,		
	2016	2015	2014
Expected income tax expense (benefit) computed on pre-tax income at weighted average income tax rate	\$ 17,365	\$ 20,058	\$ 18,178
Addition (reduction) in income tax expense (benefit) resulting from:			
Tax-exempt investment income	(8,830)	(9,588)	(8,048)
Meals and entertainment	954	897	711
State taxes, net of U.S. federal tax benefit	1,073	858	1,281
Foreign branch taxes	5,496	1,456	464
Prior year adjustment	(4,756)	2,510	320
Foreign exchange gains & losses	223	670	746
Changes in applicable tax rate	1,209	40	(51)
Dividend withholding taxes	3,319	6,323	3,276
Change in valuation allowance	4,730	2,917	(736)
Contingent consideration	9,353	11,548	6,763
Uncertain tax position	—	2,008	—
Other	1,238	915	83
Income tax expense (benefit)	\$ 31,374	\$ 40,612	\$ 22,987

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Deferred income tax assets and liabilities reflect temporary differences based on enacted tax rates between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. Significant components of the Company's deferred income tax assets and liabilities were as follows:

	December 31,	
	2016	2015
Deferred income tax assets:		
Net operating loss	\$ 13,061	\$ 11,436
AMT credit carryforward	5,350	5,304
Discounting of net loss reserves	64,220	54,373
Deferred ceding commission	15,505	—
Net unearned premium reserve	71,760	33,579
Compensation liabilities	37,757	29,069
Foreign tax credit carryforward	6,421	6,215
Interest expense	2,678	1,972
Goodwill and intangible assets	4,946	2,683
Tax and loss bonds	16,212	14,150
Net unrealized foreign exchange gains	1,308	1,573
Net unrealized decline of investments	7,384	—
Other, net	23,407	21,273
Deferred tax assets before valuation allowance	270,009	181,627
Valuation allowance	(17,028)	(13,816)
Deferred tax assets net of valuation allowance	252,981	167,811
Deferred income tax liabilities:		
Depreciation and amortization	(7,038)	(7,368)
Deferred acquisition costs, net	—	(164)
Deposit accounting liability	(4,078)	(4,151)
Contingency reserve	(19,400)	(15,289)
Net unrealized appreciation of investments	—	(4,103)
Other, net	(1,228)	(1,042)
Total deferred tax liabilities	(31,744)	(32,117)
Net deferred income tax assets	\$ 221,237	\$ 135,694

The Company provides a valuation allowance to reduce certain deferred tax assets to an amount which management expects to more likely than not be realized. As of December 31, 2016, the Company's valuation allowance was \$17.0 million, compared to \$13.8 million at December 31, 2015. The valuation allowance in both periods was primarily attributable to: (1) a full valuation allowance on the Company's Canadian operations; (2) unutilized foreign tax credits; and (3) certain other deferred tax assets relating to carryforwards that have a limited use.

At December 31, 2016, the Company has net operating loss carryforwards in its U.K. operating subsidiaries of approximately \$8.0 million. Additionally, the Company's U.K. operations have a foreign tax credit carryforward of \$6.4 million at December 31, 2016. These operating losses and foreign tax credits can be carried forward without expiration. Due to uncertainty surrounding their future utilization, a valuation

allowance of \$6.4 million is in place with respect to \$6.4 million of foreign tax credits. Beginning in 2017, the UK losses will be subject to usage restrictions that will limit the amount of carried forward losses which may be utilized in a given year. Such restrictions are not expected to limit the utilization of the Company's existing UK loss carryforwards.

At December 31, 2016, net operating loss carryforwards in Ireland were approximately \$9.2 million. Although these losses may be carried forward indefinitely, an offsetting valuation allowance of \$1.0 million exists given management's expectation that certain losses, which are specific to an individual Irish entity, will not be utilized in the future.

At December 31, 2016, net operating loss carryforwards in Australia were approximately \$7.4 million. Although these losses may be carried forward indefinitely, subject to certain business and ownership continuity requirements, the associated net deferred tax asset of \$2.2 million is fully offset by a valuation allowance of \$2.2 million.

At December 31, 2016, net operating loss carryforwards in the U.S. were approximately \$22.8 million. This includes \$4.5 million net operating loss carryforwards from the Company's consolidated VIE. The VIE's \$1.6 million deferred tax asset is fully offset by a valuation allowance. The Company's net operating loss carryforwards are currently available to offset future taxable income of the Company's U.S. subsidiaries. Under applicable law, the U.S. net operating loss carryforwards expire between 2029-2036. On January 30, 2014, the Company's U.S. mortgage operations underwent an ownership change for U.S. federal income tax purposes as a result of the Company's acquisition of the CMG Entities. As a result of this ownership change, a limitation has been imposed upon the utilization of approximately \$10.8 million of the Company's existing U.S. net operating loss carryforwards. Utilization is limited to approximately \$0.6 million per year in accordance with Section 382 of the Internal Revenue Code of 1986 as amended ("the Code"). Additionally, the Company has an alternative minimum tax ("AMT") credit carryforward in the amount of \$5.4 million which can be carried forward indefinitely.

Given the Company's U.S. mortgage operations, the Company is eligible for a tax deduction, subject to certain limitations, under Section 832(e) of the Code for amounts required by state law or regulation to be set aside in statutory contingency reserves. The deduction is allowed only to the extent that the Company purchases non-interest bearing U.S. Mortgage Guaranty Tax and Loss Bonds ("T&L Bonds") issued by the Treasury Department in an amount equal to the tax benefit derived from deducting any portion of the statutory contingency reserves. Cumulative T&L bonds purchased and subsequent redemptions are reflected in the Company's deferred tax asset and totaled approximately \$16.2 million at December 31, 2016, compared to \$14.2 million at December 31, 2015.

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Deferred income tax liabilities have not been accrued with respect to all of the undistributed earnings of the Company's subsidiaries. If the earnings were to be distributed, as dividends or otherwise, such amounts may be subject to withholding tax in the jurisdiction of the paying entity. No withholding taxes have been accrued with respect to the earnings of the Company's U.S. and Canadian subsidiaries, as it is the intention that all such earnings will be permanently reinvested. Potential tax implications of the repatriation of unremitted earnings are driven by facts at the time of distribution. Therefore it is not practicable to estimate the income tax liabilities that might be incurred if such earnings were remitted. It is intended that earnings from the U.K. and Ireland would also be permanently reinvested. Distributions from the U.K. or Ireland would not be subject to withholding tax and no deferred income tax liability would need to be accrued.

The Company recognizes interest and penalties relating to unrecognized tax benefits in the provision for income taxes. As of December 31, 2016, the Company's total unrecognized tax benefits, including interest and penalties, were \$2.0 million. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	December 31,	
	2016	2015
Balance at beginning of year	\$ 2,008	\$ —
Additions based on tax positions related to the current year	—	517
Additions for tax positions of prior years	—	1,491
Reductions for tax positions of prior years	—	—
Settlements	—	—
Balance at end of year	<u>\$ 2,008</u>	<u>\$ 2,008</u>

The Company or its subsidiaries or branches files income tax returns in the U.S. federal jurisdiction and various state, local and foreign jurisdictions. The Company's examination by the tax authorities in the U.S. for the 2009 through 2011 tax years closed with no change. The following table details open tax years that are potentially subject to examination by local tax authorities, in the following major jurisdictions:

Jurisdiction	Tax Years
United States	2013-2016
United Kingdom	2011-2016
Ireland	2012-2016
Canada	2012-2016
Switzerland	2011-2016
Denmark	2013-2016

As of December 31, 2016, the Company's current income tax recoverable (included in "Other assets") was \$8.2 million.

15. Transactions with Related Parties

Kewsong Lee, a director of ACGL, is a Managing Director and Deputy Chief Investment Officer for Corporate Private Equity of The Carlyle Group ("Carlyle"). As part of its investment philosophy, the Company invests a portion of its investment portfolio in alternative investment funds. As of December 31, 2016, the total value of the Company's investments in funds or other investments managed by Carlyle was approximately \$215.2 million, and the Company had aggregate unfunded commitments to funds managed by Carlyle of \$515.4 million. The Company may make additional commitments to funds managed by Carlyle from time to time. During 2016, 2015 and 2014, the Company made aggregate capital contributions to funds managed by Carlyle of \$62.1 million, \$116.5 million and \$63.5 million, respectively. During 2016, 2015 and 2014, the Company received aggregate cash distributions from funds managed by Carlyle of \$21.5 million, \$44.6 million and \$45.8 million, respectively.

Certain directors and executive officers of the Company own common and preference shares of Watford Re. See note 4, "Variable Interest Entity and Noncontrolling Interests," for information about Watford Re.

16. Commitments and Contingencies

Concentrations of Credit Risk

The creditworthiness of a counterparty is evaluated by the Company, taking into account credit ratings assigned by independent agencies. The credit approval process involves an assessment of factors, including, among others, the counterparty, country and industry credit exposure limits. Collateral may be required, at the discretion of the Company, on certain transactions based on the creditworthiness of the counterparty.

The areas where significant concentrations of credit risk may exist include unpaid losses and loss adjustment expenses recoverable, contractholder receivables, ceded unearned premiums, paid losses and loss adjustment expenses recoverable net of reinsurance balances payable, investments and cash and cash equivalent balances. A credit exposure exists with respect to reinsurance recoverables as they may become uncollectible. The Company manages its credit risk in its reinsurance relationships by transacting with reinsurers that it considers financially sound and, if necessary, the Company may hold collateral in the form of funds, trust accounts and/or irrevocable letters of credit. This collateral can be drawn on for amounts that remain unpaid beyond specified time periods on an individual reinsurer basis. In addition, certain insurance policies written by the Company's insurance operations feature large deductibles, primarily in its construction and national

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accounts lines of business. Under such contracts, the Company is obligated to pay the claimant for the full amount of the claim. The Company is subsequently reimbursed by the policyholder for the deductible amount. These amounts are included on a gross basis in the consolidated balance sheet in contractholder payables and contractholder receivables, respectively. In the event that the Company is unable to collect from the policyholder, the Company would be liable for such defaulted amounts. Collateral, primarily in the form of letters of credit, cash and trusts, is obtained from the policyholder to mitigate the Company's credit risk. In the instances where the company receives collateral in the form of cash, the Company records a related liability in "Collateral held for insured obligations."

In addition, the Company underwrites a significant amount of its business through brokers and a credit risk exists should any of these brokers be unable to fulfill their contractual obligations with respect to the payments of insurance and reinsurance balances owed to the Company. During 2016, approximately 14.4% and 13.5% of the Company's consolidated gross written premiums were generated from or placed by Aon Corporation and its subsidiaries and Marsh & McLennan Companies and its subsidiaries, respectively, compared to approximately 13.1% and 15.3% for 2015, respectively, and 13.4% and 15.0% for 2014, respectively. No other broker and no one insured or reinsured accounted for more than 10% of gross premiums written for 2016, 2015 and 2014.

The Company's available for sale investment portfolio is managed in accordance with guidelines that have been tailored to meet specific investment strategies, including standards of diversification, which limit the allowable holdings of any single issue. There were no investments in any entity in excess of 10% of the Company's shareholders' equity at December 31, 2016 other than investments issued or guaranteed by the United States government or its agencies.

Investment Commitments

The Company's investment commitments, which are primarily related to agreements entered into by the Company to invest in funds and separately managed accounts when called upon, were approximately \$1.29 billion at December 31, 2016.

Letter of Credit and Revolving Credit Facilities

As of December 31, 2016, ACGL and certain of its subsidiaries had a \$350.0 million secured facility for letters of credit and \$500.0 million unsecured facility for revolving loans and letters of credit (the "Credit Agreement"). Obligations of each borrower under the secured facility for letters of credit are secured by cash and eligible securities of such borrower held in collateral accounts. Subject to the receipt of commitments, the secured facility may be increased by up to an aggregate of \$350.0 million, and the unsecured facility may be increased to an amount not to exceed \$750.0 million. ACGL has a one-time

option to convert any or all outstanding revolving loans of ACGL and/or Arch-U.S. to term loans with the same terms as the revolving loans except that any prepayments may not be reborrowed. Arch-U.S. guarantees the obligations of ACGL, and ACGL guarantees the obligations of Arch-U.S. Borrowings of revolving loans may be made at a variable rate based on LIBOR or an alternative base rate at the option of ACGL. Secured letters of credit are available for issuance on behalf of ACGL insurance and reinsurance subsidiaries. The Credit Agreement and related documents are structured such that each party that requests a letter of credit or borrowing does so only for itself and for only its own obligations.

The Credit Agreement contains customary representations, conditions to issuance of letters of credit and borrowings which include, among other things: (i) the maintenance of a debt to total capital ratio of not greater than 0.35 to 1; (ii) consolidated tangible net worth in excess of and consolidated tangible net worth in excess of \$5.63 billion plus 25% of future aggregate net income (not including any future net losses) for each quarterly period ending after December 31, 2016 plus 25% of future aggregate net cash proceeds from the issuance of common or preferred equity (other than the proceeds of which are used to fund the repurchase or redemption of our preferred securities ("Refinanced Preferred Securities")), minus 70% of up to \$750.0 million of the aggregate book value of any preferred securities of ACGL which are repurchased or redeemed by ACGL or its subsidiaries (other than Refinanced Preferred Securities); and (iii) that ACGL's principal insurance and reinsurance subsidiaries that are borrowers under the Credit Agreement maintain a financial strength rating of at least a "B ++" from A.M. Best or "BBB+" from S&P. In addition, certain of ACGL's subsidiaries which are party to the Credit Agreement are required to maintain minimum shareholders' equity levels. Commitments under the Amended Credit Agreement will expire on October 26, 2021, and all loans then outstanding under the Amended Credit Agreement must be repaid. Letters of credit issued under the Amended Credit Agreement will not have an expiration date later than October 26, 2022. ACGL and its subsidiaries which are party to the Credit Agreement were in compliance with all covenants contained in the Credit Agreement at December 31, 2016.

In addition, certain of ACGL's subsidiaries had outstanding letters of credit of \$178.5 million, which were issued on a limited basis and for limited purposes (together with the secured portion of the Credit Agreement and these letter of credit facilities, the "LOC Facilities"). The principal purpose of the LOC Facilities is to issue, as required, evergreen standby letters of credit in favor of primary insurance or reinsurance counterparties with which certain of ACGL's subsidiaries has entered into reinsurance arrangements. This is required to ensure that such counterparties are permitted to take credit for reinsurance obtained in United States jurisdictions where such subsidiaries are not licensed or otherwise admitted as an insurer, as required under insurance regulations in the United States,

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and to comply with requirements of Lloyd's of London in connection with qualifying quota share and other arrangements. The amount of letters of credit issued is driven by, among other things, the timing and payment of catastrophe losses, loss development of existing reserves, the payment pattern of such reserves, the further expansion of business and the loss experience of such business. When issued, these letters of credit are secured by a portion of the investment portfolio. ACGL and its subsidiaries which are party to the LOC Facilities were in compliance with all covenants contained in the LOC Facilities at December 31, 2016. At such date, approximately \$340.6 million of letters of credit under the LOC Facilities were outstanding, which were secured by investments with a fair value of \$400.2 million, and \$500.0 million of borrowings were outstanding under the Credit Agreement. Under the \$350.0 million secured letter of credit facility, ACGL's subsidiaries had remaining capacity of \$187.9 million.

Watford Re has access to a \$100 million letter of credit facility expiring on May 19, 2018 and an \$800 million secured credit facility expiring on June 4, 2018, that provides for borrowings and the issuance of letters of credit not to exceed \$400 million. Borrowings of revolving loans may be made by Watford Re at a variable rate based on LIBOR or an alternative base rate at the option of Watford Re. At December 31, 2016, Watford Re had \$247.9 million in outstanding letters of credit under the two facilities and \$256.7 million of borrowings outstanding under the secured credit facility, backed by Watford Re's investment portfolio. Watford Re was in compliance with all covenants contained in both of its credit facilities at December 31, 2016. The Company does not guarantee or provide credit support for Watford Re, and the Company's financial exposure to Watford Re is limited to its investment in Watford Re's common and preferred shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions.

Contingent Consideration Liability

Pursuant to the Company's 2014 acquisition of the CMG Entities, the Company is required to make contingent consideration payments based on the closing book value of the pre-closing portfolio of the CMG Entities as re-calculated over an earn-out period and payable at the third, fifth and sixth anniversaries after closing (subject to a one time extension period of one to three years at the sellers' discretion). The maximum amount of contingent consideration payments is \$136.9 million over the earn-out period (or 150% of the closing book value of the CMG Entities less amounts paid at closing). To the extent that the adjusted book value of the CMG Entities drops below the cumulative amount paid by the Company, no additional payments would be due.

Leases and Purchase Obligations

At December 31, 2016, the future minimum rental commitments, exclusive of escalation clauses and maintenance costs and net of rental income, for all of the Company's operating leases are as follows:

2017	\$	29,881
2018		29,781
2019		26,796
2020		23,837
2021		18,330
Thereafter		49,471
Total	\$	<u>178,096</u>

All of these leases are for the rental of office space, with expiration terms that range from 2017 to 2025. Rental expense, net of income from subleases, was approximately \$24.2 million, \$23.8 million and \$23.1 million for 2016, 2015 and 2014, respectively.

At December 31, 2016, the Company has entered into capital lease agreements. The future lease payments for the Company's capital leases are expected to be \$10.8 million, \$10.4 million and \$4.2 million for 2017, 2018 and 2019, respectively.

The Company has also entered into certain agreements which commit the Company to purchase goods or services, primarily related to software and computerized systems. Such purchase obligations were approximately \$24.8 million and \$20.7 million at December 31, 2016 and 2015, respectively.

Employment and Other Arrangements

At December 31, 2016, the Company has entered into employment agreements with certain of its executive officers for periods extending up to March 2018. Such employment arrangements provide for compensation in the form of base salary, annual bonus, share-based awards, participation in the Company's employee benefit programs and the reimbursements of expenses.

17. Senior Notes

On May 4, 2004, ACGL completed a public offering of \$300.0 million principal amount of 7.35% senior notes due May 1, 2034 ("2034 notes"). The 2034 notes are ACGL's senior unsecured obligations and rank equally with all of its existing and future senior unsecured indebtedness. Interest payments on the 2034 notes are due on May 1st and November 1st of each year. ACGL may redeem the 2034 notes at any time and from time to time, in whole or in part, at a "make-whole" redemption price. The fair value of the 2034 notes at December 31, 2016 and 2015 was \$392.0 million and \$390.1 million, respectively.

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On December 13, 2013, Arch-U.S., a wholly-owned subsidiary of ACGL, completed a public offering of \$500.0 million principal amount of 5.144% senior notes due November 1, 2043 (“2043 notes”), fully and unconditionally guaranteed by ACGL. The 2043 notes are unsecured and unsubordinated obligations of Arch-U.S. and ACGL, respectively, and rank equally and ratably with the other unsecured and unsubordinated indebtedness of Arch-U.S. and ACGL, respectively. Interest payments on the 2043 notes are due on May 1st and November 1st of each year. Arch-U.S. may redeem the 2043 notes at any time and from time to time, in whole or in part, at a “make-whole” redemption price. The fair value of the 2043 notes at December 31, 2016 and 2015 was \$521.6 million and \$513.9 million, respectively.

On December 8, 2016, Arch Capital Finance LLC (“Arch Finance”), a wholly-owned finance subsidiary of ACGL, completed a public offering of \$500.0 million principal amount of 4.011% senior notes due December 15, 2026 (“2026 notes”), fully and unconditionally guaranteed by ACGL. The 2026 notes are unsecured and unsubordinated obligations of Arch Finance and ACGL, respectively, and rank equally and ratably with the other unsecured and unsubordinated indebtedness of Arch Finance and ACGL, respectively. Interest payments on the 2026 notes are due on June 15th and December 15th of each year. Arch Finance may redeem the 2026 notes at any time and from time to time, in whole or in part, at a “make-whole” redemption price. The Company used the net proceeds from the offering of \$495.7 million to fund a portion of the UGC acquisition. The fair value of the 2026 notes at December 31, 2016 was \$509.3 million.

On December 8, 2016, Arch Finance completed a public offering of \$450.0 million principal amount of 5.031% senior notes due December 15, 2046 (“2046 notes”), fully and unconditionally guaranteed by ACGL. The 2046 notes are unsecured and unsubordinated obligations of Arch Finance and ACGL, respectively, and rank equally and ratably with the other unsecured and unsubordinated indebtedness of Arch Finance and ACGL, respectively. Interest payments on the 2046 notes are due on June 15th and December 15th of each year. Arch Finance may redeem the 2046 notes at any time and from time to time, in whole or in part, at a “make-whole” redemption price. The Company used the net proceeds from the offering of \$445.1 million to fund a portion of the UGC acquisition. The fair value of the 2046 notes at December 31, 2016 was \$476.0 million.

18. Goodwill and Intangible Assets

The following table shows an analysis of goodwill and intangible assets:

	Goodwill	Intangible assets (indefinite life)	Intangible assets (finite life)	Total
Net balance at Dec. 31, 2014	\$ 14,946	\$ 33,524	\$ 61,069	\$ 109,539
Acquisitions	663	—	10,844	11,507
Amortization	—	—	(22,968)	(22,968)
Foreign currency translation adjustment	(73)	—	(474)	(547)
Net balance at Dec. 31, 2015	15,536	33,524	48,471	97,531
Acquisitions	188,758	34,650	481,049	704,457
Amortization	—	—	(19,335)	(19,335)
Foreign currency translation adjustment	(272)	—	(828)	(1,100)
Net balance at Dec. 31, 2016	<u>\$204,021</u>	<u>\$ 68,174</u>	<u>\$ 509,358</u>	<u>\$ 781,553</u>
Gross balance at Dec. 31, 2016	\$204,386	\$ 68,174	\$ 616,801	\$ 889,361
Accumulated amortization	—	—	(105,742)	(105,742)
Foreign currency translation adjustment	(364)	—	(1,701)	(2,066)
Net balance at Dec. 31, 2016	<u>\$204,021</u>	<u>\$ 68,174</u>	<u>\$ 509,358</u>	<u>\$ 781,553</u>

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The following table presents the components of goodwill and intangible assets:

	Gross Balance	Accumulated Amortization	Foreign Currency Translation Adjustment	Net Balance
December 31, 2016				
Acquired insurance contracts	\$ 435,067	\$ (72,771)	\$ (150)	\$ 362,146
Operating platform	44,900	(17,442)	—	27,458
Distribution relationships	145,311	(20,675)	(1,551)	123,085
Goodwill	204,386	—	(364)	204,022
Insurance licenses	68,174	—	—	68,174
Unfavorable service contract	(9,533)	5,762	—	(3,771)
Other	1,056	(616)	—	440
Total	<u>\$ 889,361</u>	<u>\$ (105,742)</u>	<u>\$ (2,066)</u>	<u>\$ 781,553</u>
December 31, 2015				
Acquired insurance contracts	\$ 85,032	\$ (62,377)	\$ (152)	\$ 22,503
Operating platform	29,900	(11,462)	—	18,438
Distribution relationships	29,296	(16,355)	(722)	12,219
Goodwill	15,628	—	(92)	15,536
Insurance licenses	33,524	—	—	33,524
Unfavorable service contract	(9,533)	4,192	—	(5,341)
Other	1,057	(405)	—	652
Total	<u>\$ 184,904</u>	<u>\$ (86,407)</u>	<u>\$ (966)</u>	<u>\$ 97,531</u>

The expected remaining amortization expense for intangible assets with a finite life is \$124.5 million for 2017, \$104.9 million for 2018, \$73.7 million for 2019, \$46.4 million for 2020 and \$28.6 million for 2021. The estimated remaining useful lives of these assets range from one to twenty years at December 31, 2016.

On December 31, 2016, goodwill and intangible assets increased as a result of the completion of the UGC acquisition (see Note 2). The transaction was accounted for using the acquisition method under which the Company recorded the identifiable assets and liabilities at their acquisition date fair values, and recorded the excess of consideration transferred over the net assets acquired as goodwill and intangible assets.

The Company's impairment reviews for goodwill and intangible assets did not result in the recognition of impairment losses for 2016, 2015 and 2014.

19. Shareholders' Equity

Authorized and Issued

The authorized share capital of ACGL consists of 600 million Common Shares, par value of \$0.0033 per share, and 50 million Preferred Shares, par value of \$0.01 per share.

Common Shares

The following table presents a roll-forward of changes in ACGL's issued and outstanding Common Shares:

	Year Ended December 31,		
	2016	2015	2014
Common Shares:			
Shares issued and outstanding, beginning of year	173,107,849	171,672,408	169,560,591
Shares issued (1)	1,149,112	1,001,667	1,493,524
Restricted shares issued, net of cancellations	387,140	433,774	618,293
Shares issued and outstanding, end of year	174,644,101	173,107,849	171,672,408
Common shares in treasury, end of year	(51,856,584)	(50,480,066)	(44,304,474)
Shares issued and outstanding, end of year	<u>122,787,517</u>	<u>122,627,783</u>	<u>127,367,934</u>

(1) Includes shares issued from the exercise of stock options and stock appreciation rights, and shares issued from the employee share purchase plan.

Share Repurchases

The board of directors of ACGL has authorized the investment in ACGL's common shares through a share repurchase program. Authorizations have consisted of a \$1.0 billion authorization in February 2007, a \$500.0 million authorization in May 2008, a \$1.0 billion authorization in November 2009, a \$1.0 billion authorization in February 2011 and a \$629.2 million authorization in November 2014. Since the inception of the share repurchase program through December 31, 2016, ACGL has repurchased approximately 125.2 million common shares for an aggregate purchase price of \$3.68 billion. During 2016, ACGL repurchased 1.1 million common shares for an aggregate purchase price of \$75.3 million, compared to 5.9 million common shares for an aggregate purchase price of \$365.4 million during 2015 and 8.2 million common shares for an aggregate purchase price of \$454.1 million during 2014. At December 31, 2016, approximately \$446.5 million of share repurchases were available under the program. Repurchases under the program may be effected from time to time in open market or privately negotiated transactions through December

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31, 2019. The timing and amount of the repurchase transactions under this program will depend on a variety of factors, including market conditions and corporate and regulatory considerations.

Treasury Shares

In May 2010, ACGL's shareholders approved amendments to the bye-laws to permit ACGL to hold its own acquired shares as treasury shares in lieu of cancellation, as determined by ACGL's board of directors. From May 5, 2010 to December 31, 2016, all repurchases of ACGL's common shares in connection with the share repurchase plan noted above and other share-based transactions were held in the treasury under the cost method, and the cost of the common shares acquired is included in 'Common shares held in treasury, at cost.' At December 31, 2016, ACGL held 51.9 million shares for an aggregate cost of \$2.03 billion in treasury, at cost.

Convertible Non-Voting Common Equivalent Preferred Shares

On December 31, 2016, the Company completed the acquisition of all of the outstanding shares of capital stock of UGC. Based upon a formula set forth in the Stock Purchase Agreement, AIG received 1,276,282 of ACGL's Series D convertible non-voting common equivalent preferred shares ("Series D preferred shares"). Each Series D preferred share converts to 10 shares of ACGL fully paid non-assessable common stock. Conversion can only occur if there is a transfer to a third party in a Widely Dispersed Offering, which has to be a transfer to third parties. "Widely Dispersed Offering" means (i) a widespread public distribution, (ii) a transfer in which no transferee (or group of associated transferees) would receive 2% or more of any class of voting securities of the Company or (iii) a transfer to a transferee that would control more than 50% of the voting securities of the Company without any transfer from the holder. Pursuant to the Investor Rights Agreement ("IRA"), transfer of the convertible preferred shares is restricted for eighteen months from December 31, 2016, as follows: (i) none may be sold prior to the six month anniversary of the closing date, (ii) one-third may be sold from June 30, 2017 through December 31, 2017; (iii) two-thirds may be sold from June 30, 2017 through June 30, 2018; and all of the Series D preferred shares may be sold from and after June 30, 2018.

Common Share Equivalents

The Company has determined that based on a review of the terms, features and rights of the series D preferred shares compared to the rights of the Company's common shareholders, the underlying 12,762,820 common shares that the convertible securities convert to were common share equivalents at the time of their issuance.

Series E Preferred Shares

On September 29, 2016, ACGL completed a \$450 million underwritten public offering of 18.0 million depositary shares (the "Depositary Shares"), each of which represents a 1/1,000th interest in a share of its 5.25% Non-Cumulative Preferred Shares, Series E, have a \$0.01 par value and \$25,000 liquidation preference per share (equivalent to \$25 liquidation preference per Depositary Share) (the "Series E preferred shares"). Each Depositary Share, evidenced by a depositary receipt, entitles the holder, through the depositary, to a proportional fractional interest in all rights and preferences of the Series E preferred shares represented thereby (including any dividend, liquidation, redemption and voting rights). Holders of Series E preferred shares will be entitled to receive dividend payments only when, as and if declared by our board of directors or a duly authorized committee of the board. Any such dividends will be payable from, and including, the date of original issue on a non-cumulative basis, quarterly in arrears on the last day of March, June, September and December of each year, at an annual rate of 5.25%. Dividends on the Series E preferred shares are not cumulative. The Company will be restricted from paying dividends on or repurchasing its common shares unless certain dividend payments are made on the Series E preferred shares. Except in specified circumstances relating to certain tax or corporate events, the Series E preferred shares are not redeemable prior to September 29, 2021 (the fifth anniversary of the issue date). On and after that date, the Series E preferred shares will be redeemable at the Company's option, in whole or in part, at a redemption price of \$25,000 per share of the Series E preferred shares (equivalent to \$25 per depositary share), plus any declared and unpaid dividends, without accumulation of any undeclared dividends to, but excluding, the redemption date. The Depositary Shares will be redeemed if and to the extent the related Series E preferred shares are redeemed by the Company. Neither the Depositary Shares nor the Series E preferred shares have a stated maturity, nor will they be subject to any sinking fund or mandatory redemption. The Series E preferred shares are not convertible into any other securities. The Series E preferred shares will not have voting rights, except under limited circumstances. The Company used the net proceeds from the offering of \$434.9 million to fund a portion of the UGC acquisition. See Note 2 for further detail on the UGC acquisition.

Series C Preferred Shares

On April 2, 2012, ACGL completed the underwritten public offering of \$325.0 million of its 6.75% Series C non-cumulative preferred shares ("Series C preferred shares"). Except in specified circumstances relating to certain tax or corporate events, the Preferred Shares are not redeemable prior to April 2, 2017. The Series C preferred shares are on parity with the Series E preferred shares with respect to payment of dividends and the distribution of assets upon a liquidation, dissolution or winding-up of ACGL. Dividends on the Company's Series C

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preferred shares are non-cumulative. Consequently, in the event dividends are not declared on the Series C preferred shares for any dividend period, holders of Series C preferred shares will not be entitled to receive a dividend for such period, and such undeclared dividend will not accrue and will not be payable. Holders of Series C preferred shares will be entitled to receive dividend payments only when, as and if declared by ACGL's board of directors or a duly authorized committee of the board of directors. Any such dividends will be payable from the date of original issue on a non-cumulative basis, quarterly in arrears. To the extent declared, these dividends will accumulate, with respect to each dividend period, in an amount per share equal to 6.75% of the \$25.00 liquidation preference per annum. In the 2016 fourth quarter, ACGL repurchased 97,807 Series C preferred shares at a weighted average price of \$25.48 per share (\$2.5 million aggregate cost).

In 2016, ACGL paid dividends of \$28.1 million, compared to \$21.9 million in 2015 and 2014, to holders of ACGL's preferred shares.

20. Share-Based Compensation

Long Term Incentive and Share Award Plans

The 2015 Long Term Incentive and Share Award Plan (the "2015 Plan") became effective as of May 7, 2015 following approval by shareholders of the Company. The purposes of the 2015 Plan are to advance the interests of ACGL and its shareholders by providing a means to attract, retain, and motivate employees and directors of ACGL and its subsidiaries. The 2015 Plan is intended to provide for competitive compensation opportunities, to encourage long-term service, to recognize individual contributions and reward achievement of performance goals, and to promote the creation of long-term value for shareholders by aligning the interests of such persons with those of shareholders. Officers, other employees and directors of ACGL and its subsidiaries will be eligible for grants of awards under the 2015 Plan. The 2015 Plan will terminate as to future awards on February 26, 2025.

The number of common shares reserved for grants of awards under the 2015 Plan, subject to anti-dilution adjustments in the event of certain changes in the Company's capital structure is 4,300,000. In addition, no more than 50% of such common shares may be issued in connection with full value awards (*i.e.*, awards other than stock options or SARs) and no more than 2,000,000 common shares may be issued as incentive stock options under Section 422 of the Code. At December 31, 2016, 2,382,507 shares are available for future issuance.

The 2012 Long Term Incentive and Share Award Plan (the "2012 Plan") became effective as of May 9, 2012 (the "Effective Date") following approval by shareholders of the Company. The 2012 Plan is intended to provide for competitive compensation opportunities, to encourage long-term service, to

recognize individual contributions and reward achievement of performance goals and to promote the creation of long-term value for shareholders by aligning the interests of such persons with those of shareholders. The 2012 Plan provides for the grant to eligible employees and directors stock options, stock appreciation rights ("SARs"), restricted shares, restricted share units payable in common shares or cash, share awards in lieu of cash awards, dividend equivalents and other share-based awards. The 2012 Plan also provides the Company's non-employee directors with the opportunity to receive the annual retainer fee for Board service in common shares. The 2012 Plan will terminate as to future awards on February 28, 2022.

The 2007 Long Term Incentive and Share Award Plan (the "2007 Plan") was merged with and into the 2012 Plan as of the Effective Date. As of the Effective Date, the 3,153,924 remaining shares available for issuance under the 2007 Plan were transferred into the 2012 Plan and as of such date no additional grants may be made under the 2007 Plan. Grants which were outstanding under the 2007 Plan as of the Effective Date will continue in accordance with their original terms (subject to such amendments as the compensation committee determines appropriate, consistent with the terms of the 2007 Plan) and will be issued or transferred under the 2012 Plan.

The number of common shares reserved for grants of awards under the 2012 Plan, subject to anti-dilution adjustments in the event of certain changes in the Company's capital structure is 7,433,924 which is the sum of (i) 4,280,000 and (ii) 3,153,924 shares remaining available for grants under the 2007 Plan. In addition, no more than 50% of such common shares may be issued in connection with full value awards (*i.e.*, awards other than stock options or SARs) and no more than 2,000,000 common shares may be issued as incentive stock options under Section 422 of the Code. At December 31, 2016, 724,553 shares are available for grant under the 2012 Plan.

On May 11, 2007, following shareholder approval, the Company adopted the 2007 Employee Share Purchase Plan with 2,250,000 common shares available for issuance. Upon shareholder approval on May 6, 2016, the Amended and Restated Arch Capital Group Ltd. 2007 Employee Share Purchase Plan (the "ESPP") became effective, which increased the number of shares available for issuance under the ESPP by 1,000,000 common shares. Prior to the amendment and restatement, 563,259 common shares remained available for issuance under the ESPP. After the amendment and restatement, a total of 1,563,259 common shares were reserved for issuance. The purpose of the ESPP is to give employees of ACGL and its subsidiaries an opportunity to purchase common shares through payroll deductions, thereby encouraging employees to share in the economic growth and success of ACGL and its subsidiaries. The ESPP is designed to qualify as an "employee share purchase plan" under Section 423 of the Code. At December 31, 2016, approximately 1,383,896 shares remain available for issuance.

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The ESPP provides for consecutive six-month offering periods (or other periods of not more than 27 months as determined by the compensation committee) under which participating employees can elect to have up to 20% of their total compensation withheld and applied to the purchase of common shares of the Company at the end of the period. Unless otherwise determined by the compensation committee before an offering period commences, (1) the purchase price will be 85% of the fair market value of the common shares at the beginning of the offering period; and (2) the maximum number of common shares that may be purchased by an employee in any offering period is 3,000 shares. In addition, applicable Code limitations specify, in general, that a participant's right to purchase stock under the ESPP cannot accumulate at a rate in excess of \$25,000 (based on the value at the beginning of the applicable offering periods) per calendar year. The Company recorded \$1.9 million of share-based compensation expense, net of a tax benefit of \$0.2 million, related to the ESPP for 2016, compared to \$1.7 million, net of a tax benefit of \$0.2 million, for 2015 and \$1.6 million, net of a tax benefit of \$0.1 million, for 2014.

With respect to certain subsidiaries, the Company may withhold, or require a participant to remit to the Company, an amount sufficient to satisfy any federal, state or local withholding tax requirements associated with awards under the Company's share award plans. This includes the authority to withhold or receive shares or other property and to make cash payments in respect thereof.

Stock Options and Stock Appreciation Rights

The Company generally issues stock options and SARs to eligible employees, with exercise prices equal to the fair market values of the Company's Common Shares on the grant dates. Such grants generally vest over a three year period with one-third vesting on the first, second and third anniversaries of the grant date. In addition, in November 2012 the Company issued off-cycle stock options and SARs to certain employees, which will cliff vest on the fifth anniversary of the grant date. Option awards and SARs have a 10 year contractual life. Refer to Note 3(m) for details related to the Company's accounting for stock options and SARs.

The Company recorded after-tax share-based compensation expense of \$11.9 million related to stock options and SARs for 2016, net of a tax benefit of \$2.2 million, compared to \$10.5 million for 2015, net of a tax benefit of \$2.2 million, and \$12.5 million for 2014, net of a tax benefit of \$2.1 million. As of December 31, 2016, there was approximately \$9.1 million of unrecognized compensation cost related to nonvested stock options and SARs. Such cost is expected to be recognized over a weighted average period of 0.9 years.

For purposes of determining estimated market value, the Company has computed the estimated market values of share-based compensation related to stock options and SARs using

the Black-Scholes option valuation model and has applied the assumptions set forth in the following table. As described above, stock options and SARs generally vest over a three year period with one-third vesting on the first, second and third anniversaries of the grant date. The expected life assumption (*i.e.*, the estimated period of time between the date an option or SAR is granted and the date the option or SAR is exercised) was based on an expected term analysis which incorporated the Company's historical exercise experience. The Company based its estimate of expected volatility for stock options and SARs granted during 2016 on daily historical trading data of its common shares from September 20, 2002, the date marking the completion of the Company's transition as a worldwide insurance and reinsurance company. For stock options and SARs granted during 2015 and 2014, the Company based its volatility estimate under the same method used for 2016, using the period from September 20, 2002 through the last day of the applicable period.

	Year Ended December 31,		
	2016	2015	2014
Dividend yield	0.0%	0.0%	0.0%
Expected volatility	21.7%	22.1%	22.8%
Risk free interest rate	1.4%	1.8%	1.9%
Expected option life	6.0 years	6.0 years	6.0 years

The Black-Scholes option pricing model requires the input of highly subjective assumptions. Because the Company's employee stock options and SARs have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models may not provide a reliable single measure of the fair value of its employee stock options and SARs. In addition, management will continue to assess the assumptions and methodologies used to calculate estimated fair value of share-based compensation. Circumstances may change and additional data may become available over time, which could result in changes to these assumptions and methodologies, and which could materially impact the Company's fair value determination.

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A summary of stock option and SAR activity under the Company's Long Term Incentive and Share Award Plans during 2016 is presented below:

	Year Ended December 31, 2016	
	Number of Options / SARs	Weighted Average Exercise Price
Outstanding, beginning of year	7,482,462	\$ 38.07
Granted	696,817	\$ 70.55
Exercised	(1,260,856)	\$ 24.45
Forfeited or expired	(45,929)	\$ 56.80
Outstanding, end of year	6,872,494	\$ 43.74
Exercisable, end of year	5,015,020	\$ 39.62

The weighted average grant-date fair value of stock options and SARs granted during 2016, 2015 and 2014 was \$17.12, \$15.90 and \$14.77, respectively. The aggregate intrinsic value of stock options and SARs exercised during 2016, 2015 and 2014 was approximately \$59.6 million, \$38.6 million, and \$58.4 million, respectively and represents the difference between the exercise price of the stock options and SARs and the closing market price of the Company's common shares on the exercise dates. Shares issued upon exercise of stock options and SARs were from the Company's authorized but unissued share capital pool.

The aggregate intrinsic value of the Company's outstanding and exercisable stock options and SARs at December 31, 2016 was \$292.4 million and \$234.0 million, respectively. The weighted average remaining contractual life of the Company's outstanding and exercisable stock options and SARs at December 31, 2016 was 5.5 years and 4.8 years, respectively. During 2016, the Company received proceeds of \$3.9 million from the exercise of stock options and recognized a tax benefit of \$6.9 million from the exercise of stock options and SARs.

Restricted Common Shares and Restricted Units

The Company also issues restricted share and unit awards to eligible employees and directors, for which the fair value is equal to the fair market values of the Company's Common Shares on the grant dates. Restricted share and unit awards generally vest over a three year period with one-third vesting on the first, second and third anniversaries of the grant date. In addition, in November 2012 the Company issued off-cycle restricted share and unit awards to certain employees, which will cliff vest on the fifth anniversary of the grant date. Refer to Note 3(m) for details related to the Company's accounting for restricted share and unit awards.

The Company recorded \$31.7 million of share-based compensation expense, net of a tax benefit of \$8.7 million, related to restricted share and unit awards for 2016, compared to \$32.9 million, net of a tax benefit of \$8.6 million, for 2015 and \$30.0 million, net of a tax benefit of \$8.4 million, for 2014.

As of December 31, 2016, there was \$32.0 million and \$4.6 million, respectively, of unrecognized compensation costs related to unvested restricted share and unit awards, which are expected to be recognized over a weighted average period of 0.9 years and 0.9 years, respectively.

A summary of unvested restricted share and unit activity under the Company's Long Term Incentive and Share Award Plans for 2016 is presented below:

	Year Ended December 31, 2016	
	Restricted Common Shares	Restricted Unit Awards
Unvested Shares:		
Unvested balance, beginning of year	1,800,593	264,629
Granted	417,956	63,024
Vested	(541,409)	(89,054)
Forfeited	(30,816)	(15,113)
Unvested balance, end of year	1,646,324	223,486
Weighted Average Grant Date Fair Value:		
Unvested balance, beginning of year	\$ 51.94	\$ 51.33
Granted	\$ 71.76	\$ 71.50
Vested	\$ 57.72	\$ 56.20
Forfeited	\$ 57.76	\$ 54.84
Unvested balance, end of year	\$ 54.96	\$ 54.84

During 2016, 2015 and 2014, the Company granted an aggregate of 480,980, 571,978 and 767,469 restricted share and restricted unit awards, respectively, with weighted average grant date fair values of \$71.73, \$62.69 and \$56.97, respectively. During 2016, 2015 and 2014, the aggregate fair value of restricted shares and units that vested was \$45.2 million, \$43.8 million and \$38.6 million, respectively. The aggregate intrinsic value of restricted units outstanding at December 31, 2016 was \$32.9 million, and the aggregate intrinsic value of restricted units vested and deferred was \$13.6 million.

The issuance of share-based awards and amortization thereon has no effect on the Company's consolidated shareholders' equity.

21. Retirement Plans

For purposes of providing employees with retirement benefits, the Company maintains defined contribution retirement plans. Contributions are based on the participants' eligible compensation. For 2016, 2015 and 2014, the Company expensed \$30.6 million, \$29.7 million and \$26.8 million, respectively, related to these retirement plans.

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22. Legal Proceedings

The Company, in common with the insurance industry in general, is subject to litigation and arbitration in the normal course of its business. As of December 31, 2016, the Company was not a party to any litigation or arbitration which is expected by management to have a material adverse effect on the Company's results of operations and financial condition and liquidity.

23. Statutory Information

The Company's insurance and reinsurance subsidiaries are subject to insurance and/or reinsurance laws and regulations in the jurisdictions in which they operate. These regulations include certain restrictions on the amount of dividends or other distributions available to shareholders without prior approval of the insurance regulatory authorities.

The actual and required statutory capital and surplus for the Company's principal operating subsidiaries at December 31, 2016 and 2015:

	December 31,	
	2016	2015
Actual capital and surplus (1):		
Bermuda	\$ 8,960,248	\$ 6,397,010
Ireland	607,410	559,996
United States	4,660,855	1,564,056
United Kingdom	340,300	395,197
Canada	71,247	67,436
Required capital and surplus:		
Bermuda	\$ 3,077,684	\$ 2,129,064
Ireland	283,544	459,271
United States	1,811,938	488,794
United Kingdom	276,928	321,462
Canada	35,858	36,360

- (1) Such amounts include ownership interests in affiliated insurance and reinsurance subsidiaries.

The statutory net income (loss) for the Company's principal operating subsidiaries for 2016, 2015 and 2014 was as follows:

	Year Ended December 31,		
	2016	2015	2014
Statutory net income (loss):			
Bermuda	\$ 886,492	\$ 514,151	\$ 692,676
Ireland	26,935	29,041	43,197
United States	67,826	76,604	46,110
United Kingdom	(7,512)	(6,924)	13,016
Canada	621	(1,098)	1,517

Statutory accounting differs from U.S. GAAP in the reporting of certain items such as acquisition costs, deferred income taxes and investments.

Bermuda

Under The Insurance Act 1978, as amended, and related regulations of Bermuda (the "Insurance Act"), Arch Re Bermuda, the Company's Bermuda reinsurance and insurance subsidiary, is registered as a Class 4 insurer and long-term insurer and is required to annually prepare and file statutory financial statements and a statutory financial return with the Bermuda Monetary Authority ("BMA"). The Insurance Act also requires Arch Re Bermuda to maintain minimum share capital and must ensure that the value of its general business assets exceeds the amount of its general business liabilities by an amount greater than the prescribed minimum solvency margins and enhanced capital requirement pertaining to its general business. At December 31, 2016, all such requirements were met.

Arch Re Bermuda is also required to file a regulatory risk based capital model that measures risks and determines enhanced capital requirements and a target capital level. In addition, all Class 4 Bermuda insurers must prepare and file with the BMA audited GAAP basis annual financial statements, which must be made publicly available. Declarations of dividends from retained earnings and distributions from additional paid-in-capital are subject to these requirements being met. For all applicable periods presented herein, Arch Re Bermuda satisfied these requirements.

The Bermuda Companies Act 1981 (the "Companies Act") limits Arch Re Bermuda's ability to pay dividends and distributions to shareholders if there are reasonable grounds for believing that: (a) Arch Re Bermuda is, or would after the payment be, unable to pay its liabilities as they become due; or (b) the realizable value of Arch Re Bermuda's assets would thereby be less than the aggregate of its liabilities and its issued share capital and share premium accounts. Under the Insurance Act, Arch Re Bermuda is restricted with respect to the payment of dividends. Arch Re Bermuda is prohibited from declaring or paying in any financial year dividends of more than 25% of its total statutory capital and surplus (as shown on its previous financial year's statutory balance sheet) unless it files, at least seven days before payment of such dividends, with the Bermuda Monetary Authority an affidavit stating that it will continue to meet the required margins. In addition, Arch Re Bermuda is prohibited, without prior approval of the Bermuda Monetary Authority, from reducing by 15% or more its total statutory capital, as set out in its previous year's statutory financial statements. Accordingly, Arch Re Bermuda can pay approximately \$1.97 billion to ACGL during 2017 without providing an affidavit to the BMA.

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Watford Re is registered as a Class 4 insurer and is required to annually prepare and file statutory financial statements and a statutory financial return with the BMA. The Insurance Act also requires Watford Re to maintain minimum share capital and must ensure that the value of its general business assets exceeds the amount of its general business liabilities by an amount greater than the prescribed minimum solvency margins and enhanced capital requirement pertaining to its general business. At December 31, 2016, all such requirements were met.

Ireland

Arch Re Europe was licensed and authorized by the Central Bank of Ireland (“CBOI”) as a non-life reinsurer in October 2008 and as a life reinsurer in November 2009 while Arch MI Europe was authorized as a non-life insurer in Ireland in December 2011. Irish authorized reinsurers and insurers, such as Arch Re Europe and Arch MI Europe, are also subject to the general body of Irish laws and regulations including the provisions of the Companies Act 2014. Arch Re Europe and Arch MI Europe are subject to the supervision of the CBOI and must comply with Irish insurance acts and regulations as well as with directions and guidance issued by the CBOI. Arch Re Europe and Arch MI Europe are required to maintain reserves, particularly in respect of underwriting liabilities and a solvency margin. Assets constituting statutory reserves must comply with certain principles including obligations to secure sufficiency, liquidity, security, quality, profitability and currency matching of investments. Statutory reserves must be actuarially certified annually.

Under Irish company law, Arch Re Europe and Arch MI Europe are permitted to make distributions only out of profits available for distribution. A company’s profits available for distribution are its accumulated, realized profits, so far as not previously utilized by distribution or capitalization, less its accumulated, realized losses, so far as not previously written off in a reduction or reorganization of capital duly made. Further, the CBOI has powers to intervene if a dividend payment were to lead to a breach of regulatory capital requirements. Dividends or distributions, if any, made by Arch Re Europe would result in an increase in available capital at Arch Re Bermuda.

United States

The Company’s U.S. insurance and reinsurance subsidiaries file financial statements prepared in accordance with statutory accounting practices prescribed or permitted by insurance regulators. Statutory net income and statutory surplus, as reported to the insurance regulatory authorities, differ in certain respects from the amounts prepared in accordance with GAAP. The main differences between statutory net income and GAAP net income relate to deferred acquisition costs and deferred income taxes. In addition to deferred acquisition costs and deferred income tax assets, other differences between statutory surplus and GAAP shareholder’s equity are unrealized

appreciation or decline in value of investments and non-admitted assets.

The Company’s U.S. insurance and reinsurance subsidiaries are subject to insurance laws and regulations in the jurisdictions in which they operate. The ability of the Company’s regulated insurance subsidiaries to pay dividends or make distributions is dependent on their ability to meet applicable regulatory standards. These regulations include restrictions that limit the amount of dividends or other distributions, such as loans or cash advances, available to shareholders without prior approval of the insurance regulatory authorities. Dividends or distributions, if any, made by Arch Re U.S. would result in an increase in available capital at Arch-U.S., the Company’s U.S. holding company. Arch Re U.S. can declare a maximum of approximately \$128.4 million of dividends during 2017 subject to the approval of the Commissioner of the Delaware Department of Insurance (“Commissioner”). In addition, with respect to dividends in excess of the \$128.4 million (extraordinary dividend), no payment can be made until (1) 30 days after the Commissioner has received notice of the declaration thereof and has not within such period disapproved such payments; or (2) the Commissioner shall have approved the payment within the 30-day period. Delaware insurance laws also require that the statutory surplus of Arch Re U.S. following any dividend or distribution be reasonable in relation to its outstanding liabilities and adequate to its financial needs.

AMIC, United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company have each been approved as an eligible mortgage insurer by Fannie Mae and Freddie Mac, subject to maintaining certain ongoing requirements (“eligible mortgage insurers”). In April 2015, the GSEs published comprehensive, revised requirements, known as the Private Mortgage Insurer Eligibility Requirements or “PMIERs.” As clarified and revised by the Guidance Letters issued by the GSEs in December 2016, the PMIERs apply to the Company’s eligible mortgage insurers, but do not apply to Arch Mortgage Guaranty Company, which is not GSE-approved.

The amount of assets required to satisfy the revised financial requirements of the PMIERs at any point in time will be affected by many factors, including macro-economic conditions, the size and composition of our eligible mortgage insurers’ mortgage insurance portfolio at the point in time, and the amount of risk ceded to reinsurers that may be deducted in our calculation of “minimum required assets.” The Company’s eligible mortgage insurers satisfied the PMIERs’ financial requirements as of December 31, 2016.

Under the PMIERs, AMIC was deemed to be a “newly-approved insurer.” As a result of this status, until January 2017, AMIC was subject to additional PMIER requirements, including restrictions on dividends to affiliates or making any investment, contribution or loan to any affiliate. Since January

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2017, none of the Company's eligible mortgage insurers are classified as a "newly-approved insurer" under PMIERS.

The Company's U.S. mortgage insurance subsidiaries are subject to detailed regulation by their domiciliary and primary regulators, the Wisconsin Office of the Commissioner of Insurance ("Wisconsin OCI") for AMIC and Arch Mortgage Guaranty Company, and the North Carolina Department of Insurance ("NC DOI") for United Guaranty Residential Insurance Company and United Guaranty Mortgage Indemnity Company, and by state insurance departments in each state in which they are licensed. As mandated by state insurance laws, mortgage insurers are generally mono-line companies restricted to writing a single type of insurance business, such as mortgage insurance business. Each company is subject to either Wisconsin or North Carolina statutory requirements as to payment of dividends. Generally, both Wisconsin and North Carolina law precludes any dividend before giving at least 30 days' notice to the Wisconsin OCI or NC DOI, as applicable, and prohibits paying any dividend unless it is fair and reasonable to do so. In addition, the state regulators and the GSEs limit or restrict our eligible mortgage insurers' ability to pay stockholder dividends or otherwise return capital to shareholders. Under North Carolina law, United Guaranty Residential Insurance Company can declare a maximum of approximately \$313.3 million of dividends during 2017 subject to the approval of the NC DOI. In certain instances, approval by the GSEs would be required for dividends or other forms of return of capital to shareholders due to the requirements under PMIERS, including the minimum required assets imposed on our eligible mortgage insurers by the GSEs. Such dividend would result in an increase in available capital at Arch U.S. MI Holdings Inc., a subsidiary of Arch-U.S.

Mortgage insurance companies licensed in Wisconsin or North Carolina are required to establish contingency loss reserves for purposes of statutory accounting in an amount equal to at least 50% of net earned premiums. These amounts generally cannot be withdrawn for a period of 10 years and are separate liabilities for statutory accounting purposes, which affects the ability to pay dividends. However, with prior regulatory approval, a mortgage insurance company may make early withdrawals from the contingency reserve when incurred losses exceed 35% of net premiums earned in a calendar year.

Under Wisconsin and North Carolina law, as well as that of 14 other states, a mortgage insurer must maintain a minimum amount of statutory capital relative to its risk in force in order for the mortgage insurer to continue to write new business. While formulations of minimum capital vary in certain jurisdictions, the most common measure applied allows for a maximum risk-to-capital ratio of 25 to 1. Wisconsin and North Carolina both require a mortgage insurer to maintain a "minimum policyholder position" calculated in accordance with their respective regulations. Policyholders' position consists primarily of statutory policyholders' surplus plus the

statutory contingency reserve, less ceded reinsurance. While the statutory contingency reserve is reported as a liability on the statutory balance sheet, for risk-to-capital ratio calculations, it is included as capital for purposes of statutory capital.

United Kingdom

The Company's European insurance operations are conducted on two platforms: Arch Insurance Company Europe and Arch Syndicate 2012 (collectively, the insurance operations are referred to as "Arch Insurance Europe"). Arch Insurance Company Europe was licensed and authorized by the Financial Services Authority ("FSA") to underwrite all classes of general insurance in the U.K. in May 2004. In 2009, AUAL was licensed and authorized by the FSA and the Lloyd's Franchise Board. AUAL holds the relevant permissions for the classes of insurance business which are underwritten in the U.K. by Arch Syndicate 2012. Arch Syndicate 2012 has one member, Arch Syndicate Investments Ltd. The FSA was replaced by the Prudential Regulatory Authority ("PRA") and the Financial Conduct Authority ("FCA") in 2013. The PRA has responsibility for the prudential regulation of banks and insurers, while the FCA has responsibility for the conduct of business regulation in the wholesale and retail markets. All U.K. companies are also subject to a range of statutory provisions, including the laws and regulations of the Companies Acts 2006 (as amended) (the "U.K. Companies Acts").

Arch Insurance Company Europe and AUAL (on behalf of itself, Arch Syndicate 2012 and ASIL) are each required to demonstrate the adequacy of its financial assets to the PRA. On a periodic basis, Arch Insurance Europe is required to provide the PRA and Lloyd's with its own risk-based assessment of its capital needs, taking into account comprehensive risk factors, including market, credit, operational, liquidity and group risks to generate a revised calculation of its expected liabilities which, in turn, enables the PRA and Lloyd's to provide individual capital guidance and requirements to Arch Insurance Europe. Arch Insurance Europe's surplus is above the risk-based capital threshold allowed by the PRA's individual capital assessment of Arch Insurance Europe. The PRA requires that Arch Insurance Europe maintain a margin of solvency calculation based on the classes of business for which it is authorized and within its premium income projections applied to its worldwide general business.

Under U.K. law, all U.K. companies are restricted from declaring a dividend to their shareholders unless they have "profits available for distribution." The calculation as to whether a company has sufficient profits is based on its accumulated realized profits minus its accumulated realized losses. U.K. insurance regulatory laws do not prohibit the payment of dividends, but the PRA or FCA, as applicable, requires that insurance companies and insurance intermediaries maintain certain solvency margins and may restrict the payment of a dividend by Arch Insurance Company Europe, AUAL and

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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ASIL. Dividends or distributions, if any, made by Arch Insurance Europe would result in an increase in available capital at Arch Re Europe, a subsidiary of Arch Re Bermuda.

Canada

Arch Insurance Canada and the Canadian branch of Arch Re U.S. (“Arch Re Canada”) are subject to federal, as well as provincial and territorial, regulation in Canada. The Office of the Superintendent of Financial Institutions (“OSFI”) is the federal regulatory body that, under the Insurance Companies Act (Canada), regulates federal Canadian and non-Canadian insurance companies operating in Canada. Arch Insurance Canada and Arch Re Canada are subject to regulation in the provinces and territories in which they underwrite insurance/reinsurance, and the primary goal of insurance/reinsurance regulation at the provincial and territorial levels is to govern the market conduct of insurance/reinsurance companies. Arch

Insurance Canada is licensed to carry on insurance business by OSFI and in each province and territory. Arch Re Canada is licensed to carry-on reinsurance business by OSFI and in the provinces of Ontario and Quebec.

Under the Insurance Companies Act (Canada), Arch Insurance Canada is required to maintain an adequate amount of capital in Canada, calculated in accordance with a test promulgated by OSFI called the Minimum Capital Test (“MCT”), and Arch Re Canada is required to maintain an adequate margin of assets over liabilities in Canada, calculated in accordance with a test promulgated by OSFI called the Branch Adequacy of Assets Test. Dividends or distributions, if any, made by Arch Insurance Canada would result in an increase in available capital at Arch Insurance Company (see “—United States” section).

24. Unaudited Condensed Quarterly Financial Information

The following table summarizes the 2016 and 2015 unaudited condensed quarterly financial information:

	Fourth Quarter	Third Quarter	Second Quarter	First Quarter
Year Ended December 31, 2016				
Net premiums written	\$ 872,315	\$ 1,014,278	\$ 1,023,563	\$ 1,121,235
Net premiums earned	968,855	958,403	1,005,985	951,579
Net investment income	91,051	93,618	88,338	93,735
Net realized gains (losses)	(93,061)	125,105	68,218	37,324
Net impairment losses recognized in earnings	(13,593)	(3,867)	(5,343)	(7,639)
Underwriting income	109,246	122,782	111,746	110,943
Net income attributable to Arch	74,013	252,872	211,055	154,798
Preferred dividends	(11,617)	(5,484)	(5,485)	(5,484)
Net income available to Arch common shareholders	62,396	247,388	205,570	149,314
Net income per common share -- basic	\$ 0.51	\$ 2.05	\$ 1.70	\$ 1.24
Net income per common share -- diluted	\$ 0.50	\$ 1.98	\$ 1.65	\$ 1.20
Year Ended December 31, 2015				
Net premiums written	\$ 834,984	\$ 971,972	\$ 943,580	\$ 1,066,995
Net premiums earned	943,520	936,683	943,438	910,264
Net investment income	95,900	86,233	86,963	78,994
Net realized gains (losses)	(143,767)	(89,698)	(35,725)	83,348
Net impairment losses recognized in earnings	(7,336)	(5,868)	(1,113)	(5,799)
Underwriting income	113,143	94,779	105,114	116,471
Net income attributable to Arch	58,579	80,033	115,790	283,336
Preferred dividends	(5,485)	(5,484)	(5,485)	(5,484)
Net income available to Arch common shareholders	53,094	74,549	110,305	277,852
Net income per common share -- basic	\$ 0.44	\$ 0.62	\$ 0.91	\$ 2.24
Net income per common share -- diluted	\$ 0.42	\$ 0.60	\$ 0.88	\$ 2.16

25. Guarantor Financial Information

In December 2016, the Company issued \$950 million of senior notes through Arch Finance, a Delaware limited liability company and a 100% owned subsidiary of ACG (see Note 17). The notes are fully and unconditionally guaranteed by ACG. Arch Finance was formed for the sole purpose of issuing the senior notes and has no business activities. Following the closing of the offering,

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Arch Finance lent the net proceeds of the offering to Arch U.S. MI Holdings Inc., the direct parent company of AMIC and purchaser of UGC, and received an intercompany note in consideration thereof. This intercompany note is the issuer's sole asset. Arch Finance will file a separate Form 10-K for 2016.

The following tables present condensed consolidating balance sheets at December 31, 2016 and 2015 and condensed consolidating statements of income, comprehensive income and cash flows for 2016, 2015 and 2014 for ACGL, Arch-U.S., a 100% owned subsidiary of ACGL, and ACGL's other subsidiaries.

Condensed Consolidating Balance Sheet	December 31, 2016				
	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Assets					
Total investments	\$ 2,612	\$ 41,672	\$ 19,690,067	\$ (14,700)	\$ 19,719,651
Cash	1,687	71,955	769,300	—	842,942
Investments in subsidiaries	8,660,586	3,716,681	—	(12,377,267)	—
Due from subsidiaries and affiliates	14,297	51,298	1,866,681	(1,932,276)	—
Premiums receivable	—	—	1,579,865	(507,430)	1,072,435
Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses	—	—	6,114,518	(4,000,380)	2,114,138
Contractholder receivables	—	—	1,717,436	—	1,717,436
Ceded unearned premiums	—	—	1,985,311	(1,125,744)	859,567
Deferred acquisition costs	—	—	577,461	(129,901)	447,560
Other assets	15,725	49,244	2,683,339	(149,928)	2,598,380
Total assets	<u>\$ 8,694,907</u>	<u>\$ 3,930,850</u>	<u>\$ 36,983,978</u>	<u>\$ (20,237,626)</u>	<u>\$ 29,372,109</u>
Liabilities					
Reserve for losses and loss adjustment expenses	\$ —	\$ —	\$ 14,164,191	\$ (3,963,231)	\$ 10,200,960
Unearned premiums	—	—	4,532,614	(1,125,744)	3,406,870
Reinsurance balances payable	—	—	807,837	(507,430)	300,407
Contractholder payables	—	—	1,717,436	—	1,717,436
Collateral held for insured obligations	—	—	301,406	—	301,406
Deposit accounting liabilities	—	—	22,150	—	22,150
Senior notes	296,957	494,525	940,776	—	1,732,258
Revolving credit agreement borrowings	100,000	—	656,650	—	756,650
Due to subsidiaries and affiliates	26,270	535,584	1,370,422	(1,932,276)	—
Other liabilities	17,962	54,823	1,867,040	(316,978)	1,622,847
Total liabilities	<u>441,189</u>	<u>1,084,932</u>	<u>26,380,522</u>	<u>(7,845,659)</u>	<u>20,060,984</u>
Redeemable noncontrolling interests	—	—	220,253	(14,700)	205,553
Shareholders' Equity					
Total shareholders' equity available to Arch	8,253,718	2,845,918	9,531,349	(12,377,267)	8,253,718
Non-redeemable noncontrolling interests	—	—	851,854	—	851,854
Total shareholders' equity	<u>8,253,718</u>	<u>2,845,918</u>	<u>10,383,203</u>	<u>(12,377,267)</u>	<u>9,105,572</u>
Total liabilities, noncontrolling interests and shareholders' equity	<u>\$ 8,694,907</u>	<u>\$ 3,930,850</u>	<u>\$ 36,983,978</u>	<u>\$ (20,237,626)</u>	<u>\$ 29,372,109</u>

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December 31, 2015

Condensed Consolidating Balance Sheet	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Assets					
Total investments	\$ 50	\$ 42,210	\$ 15,815,381	\$ (14,700)	\$ 15,842,941
Cash	6,809	17,023	529,494	—	553,326
Investments in subsidiaries	6,570,835	1,712,757	—	(8,283,592)	—
Due from subsidiaries and affiliates	23	48,811	384,469	(433,303)	—
Premiums receivable	—	—	1,376,310	(392,867)	983,443
Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses	—	—	5,783,452	(3,916,079)	1,867,373
Contractholder receivables	—	—	1,486,296	—	1,486,296
Ceded unearned premiums	—	—	1,511,795	(1,084,186)	427,609
Deferred acquisition costs	—	—	382,829	—	382,829
Other assets	4,138	45,522	2,131,588	(586,134)	1,595,114
Total assets	<u>\$ 6,581,855</u>	<u>\$ 1,866,323</u>	<u>\$ 29,401,614</u>	<u>\$ (14,710,861)</u>	<u>\$ 23,138,931</u>
Liabilities					
Reserve for losses and loss adjustment expenses	\$ —	\$ —	\$ 13,010,608	\$ (3,885,358)	\$ 9,125,250
Unearned premiums	—	—	3,418,118	(1,084,186)	2,333,932
Reinsurance balances payable	—	—	603,586	(379,466)	224,120
Contractholder payables	—	—	1,486,296	—	1,486,296
Collateral held for insured obligations	—	—	248,982	—	248,982
Deposit accounting liabilities	—	—	463,507	(203,143)	260,364
Senior notes	296,874	494,432	—	—	791,306
Revolving credit agreement borrowings	100,000	—	430,434	—	530,434
Due to subsidiaries and affiliates	26	35,000	398,277	(433,303)	—
Other liabilities	18,413	50,890	1,385,500	(427,111)	1,027,692
Total liabilities	<u>415,313</u>	<u>580,322</u>	<u>21,445,308</u>	<u>(6,412,567)</u>	<u>16,028,376</u>
Redeemable noncontrolling interests	—	—	219,882	(14,700)	205,182
Shareholders' Equity					
Total shareholders' equity available to Arch	6,166,542	1,286,001	6,997,593	(8,283,594)	6,166,542
Non-redeemable noncontrolling interests	—	—	738,831	—	738,831
Total shareholders' equity	<u>6,166,542</u>	<u>1,286,001</u>	<u>7,736,424</u>	<u>(8,283,594)</u>	<u>6,905,373</u>
Total liabilities, noncontrolling interests and shareholders' equity	<u>\$ 6,581,855</u>	<u>\$ 1,866,323</u>	<u>\$ 29,401,614</u>	<u>\$ (14,710,861)</u>	<u>\$ 23,138,931</u>

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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Year Ended December 31, 2016

Condensed Consolidating Statement of Income and Comprehensive Income	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Revenues					
Net premiums earned	\$ —	\$ —	\$ 3,884,822	\$ —	\$ 3,884,822
Net investment income	694	3,162	393,114	(30,228)	366,742
Net realized gains (losses)	12	5	137,569	—	137,586
Net impairment losses recognized in earnings	—	—	(30,442)	—	(30,442)
Other underwriting income	—	—	73,671	(16,498)	57,173
Equity in net income (loss) of investment funds accounted for using the equity method	—	—	48,475	—	48,475
Other income (loss)	180	—	(980)	—	(800)
Total revenues	886	3,167	4,506,229	(46,726)	4,463,556
Expenses					
Losses and loss adjustment expenses	—	—	2,185,599	—	2,185,599
Acquisition expenses	—	—	678,033	—	678,033
Other operating expenses	—	—	633,025	—	633,025
Corporate expenses	49,540	1,940	30,266	—	81,746
Interest expense	23,769	27,165	60,757	(45,439)	66,252
Net foreign exchange (gains) losses	—	—	(17,217)	(19,434)	(36,651)
Total expenses	73,309	29,105	3,570,463	(64,873)	3,608,004
Income (loss) before income taxes	(72,423)	(25,938)	935,766	18,147	855,552
Income tax (expense) benefit	—	8,676	(40,050)	—	(31,374)
Income (loss) before equity in net income of subsidiaries	(72,423)	(17,262)	895,716	18,147	824,178
Equity in net income of subsidiaries	765,161	54,497	—	(819,658)	—
Net income	692,738	37,235	895,716	(801,511)	824,178
Net (income) loss attributable to noncontrolling interests	—	—	(132,727)	1,287	(131,440)
Net income available to Arch	692,738	37,235	762,989	(800,224)	692,738
Preferred dividends	(28,070)	—	—	—	(28,070)
Net income available to Arch common shareholders	\$ 664,668	\$ 37,235	\$ 762,989	\$ (800,224)	\$ 664,668
Comprehensive income (loss) available to Arch	\$ 594,699	\$ 13,444	\$ 684,447	\$ (697,891)	\$ 594,699

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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Year Ended December 31, 2015

Condensed Consolidating Statement of Income and Comprehensive Income	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Revenues					
Net premiums earned	\$ —	\$ —	\$ 3,733,905	\$ —	\$ 3,733,905
Net investment income	1	2,342	368,413	(22,666)	348,090
Net realized gains (losses)	—	1	(185,843)	—	(185,842)
Net impairment losses recognized in earnings	—	—	(20,116)	—	(20,116)
Other underwriting income	—	—	35,739	(242)	35,497
Equity in net income (loss) of investment funds accounted for using the equity method	—	—	25,455	—	25,455
Other income (loss)	—	—	(399)	—	(399)
Total revenues	<u>1</u>	<u>2,343</u>	<u>3,957,154</u>	<u>(22,908)</u>	<u>3,936,590</u>
Expenses					
Losses and loss adjustment expenses	—	—	2,050,903	—	2,050,903
Acquisition expenses	—	—	681,476	—	681,476
Other operating expenses	—	—	607,516	—	607,516
Corporate expenses	48,107	3,689	(2,051)	—	49,745
Interest expense	23,450	26,502	18,024	(22,102)	45,874
Net foreign exchange (gains) losses	—	—	(41,622)	(24,496)	(66,118)
Total expenses	<u>71,557</u>	<u>30,191</u>	<u>3,314,246</u>	<u>(46,598)</u>	<u>3,369,396</u>
Income (loss) before income taxes	(71,556)	(27,848)	642,908	23,690	567,194
Income tax (expense) benefit	—	9,732	(50,344)	—	(40,612)
Income (loss) before equity in net income of subsidiaries	(71,556)	(18,116)	592,564	23,690	526,582
Equity in net income of subsidiaries	609,294	50,156	—	(659,450)	—
Net income	537,738	32,040	592,564	(635,760)	526,582
Net (income) loss attributable to noncontrolling interests	—	—	10,351	805	11,156
Net income available to Arch	537,738	32,040	602,915	(634,955)	537,738
Preferred dividends	(21,938)	—	—	—	(21,938)
Net income available to Arch common shareholders	\$ 515,800	\$ 32,040	\$ 602,915	\$ (634,955)	\$ 515,800
Comprehensive income (loss) available to Arch	<u>\$ 392,379</u>	<u>\$ 838</u>	<u>\$ 482,047</u>	<u>\$ (482,885)</u>	<u>\$ 392,379</u>

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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Year Ended December 31, 2014

Condensed Consolidating Statement of Income and Comprehensive Income	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Revenues					
Net premiums earned	\$ —	\$ —	\$ 3,593,748	\$ —	\$ 3,593,748
Net investment income	—	—	326,831	(24,246)	302,585
Net realized gains (losses)	—	5	102,912	—	102,917
Net impairment losses recognized in earnings	—	—	(30,150)	—	(30,150)
Other underwriting income	—	—	10,142	—	10,142
Equity in net income (loss) of investment funds accounted for using the equity method	—	—	19,883	—	19,883
Other income (loss)	—	—	(10,252)	—	(10,252)
Total revenues	—	5	4,013,114	(24,246)	3,988,873
Expenses					
Losses and loss adjustment expenses	—	—	1,919,250	—	1,919,250
Acquisition expenses	—	—	657,262	—	657,262
Other operating expenses	—	—	556,280	—	556,280
Corporate expenses	46,074	3,387	483	—	49,944
Interest expense	23,423	25,817	20,640	(24,246)	45,634
Net foreign exchange (gains) losses	—	—	(53,222)	(30,522)	(83,744)
Total expenses	69,497	29,204	3,100,693	(54,768)	3,144,626
Income (loss) before income taxes	(69,497)	(29,199)	912,421	30,522	844,247
Income tax (expense) benefit	—	10,125	(33,112)	—	(22,987)
Income (loss) before equity in net income of subsidiaries	(69,497)	(19,074)	879,309	30,522	821,260
Equity in net income of subsidiaries	903,852	53,584	—	(957,436)	—
Net income	834,355	34,510	879,309	(926,914)	821,260
Net (income) loss attributable to noncontrolling interests	—	—	13,095	—	13,095
Net income available to Arch	834,355	34,510	892,404	(926,914)	834,355
Preferred dividends	(21,938)	—	—	—	(21,938)
Net income available to Arch common shareholders	\$ 812,417	\$ 34,510	\$ 892,404	\$ (926,914)	\$ 812,417
Comprehensive income (loss) available to Arch	\$ 888,247	\$ 33,671	\$ 976,821	\$ (1,010,492)	\$ 888,247

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Year Ended December 31, 2016

Condensed Consolidating Statement of Cash Flows	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Operating Activities					
Net Cash Provided By (Used For) Operating Activities	\$ 148,211	\$ 6,395	\$ 1,465,166	\$ (223,128)	\$ 1,396,644
Investing Activities					
Purchases of fixed maturity investments	—	—	(35,532,810)	—	(35,532,810)
Purchases of equity securities	—	—	(665,702)	—	(665,702)
Purchases of other investments	—	—	(1,389,406)	—	(1,389,406)
Proceeds from the sales of fixed maturity investments	—	—	34,559,966	—	34,559,966
Proceeds from the sales of equity securities	—	—	751,728	—	751,728
Proceeds from the sales, redemptions and maturities of other investments	—	—	1,149,328	—	1,149,328
Proceeds from redemptions and maturities of fixed maturity investments	—	41,500	713,507	—	755,007
Net settlements of derivative instruments	—	—	(17,068)	—	(17,068)
Net (purchases) sales of short-term investments	(2,075)	(40,963)	(80,372)	—	(123,410)
Change in cash collateral related to securities lending	—	—	(155,248)	—	(155,248)
Contributions to subsidiaries	(479,912)	(887,650)	(546,269)	1,913,831	—
Intercompany loans issued	—	—	(1,460,000)	1,460,000	—
Purchase of business, net of cash acquired	—	—	(1,992,720)	—	(1,992,720)
Purchases of fixed assets	(8)	—	(15,295)	—	(15,303)
Change in other assets	2,000	—	(47,905)	—	(45,905)
Net Cash Provided By (Used For) Investing Activities	(479,995)	(887,113)	(4,728,266)	3,373,831	(2,721,543)
Financing Activities					
Proceeds from preferred shares issued, net	434,899	—	—	—	434,899
Purchases of common shares under share repurchase program	(75,256)	—	—	—	(75,256)
Proceeds from common shares issued, net	(2,418)	435,450	1,478,381	(1,913,831)	(2,418)
Proceeds from intercompany borrowings	—	500,000	960,000	(1,460,000)	—
Proceeds from borrowings	—	—	1,386,741	—	1,386,741
Repayments of borrowings	—	—	(219,171)	—	(219,171)
Change in cash collateral related to securities lending	—	—	155,248	—	155,248
Dividends paid to redeemable noncontrolling interests	—	—	(19,264)	1,275	(17,989)
Dividends paid to parent (1)	—	—	(221,853)	221,853	—
Other	(2,493)	200	3,978	—	1,685
Preferred dividends paid	(28,070)	—	—	—	(28,070)
Net Cash Provided By (Used For) Financing Activities	326,662	935,650	3,524,060	(3,150,703)	1,635,669
Effects of exchange rates changes on foreign currency cash	—	—	(21,154)	—	(21,154)
Increase (decrease) in cash	(5,122)	54,932	239,806	—	289,616
Cash beginning of year	6,809	17,023	529,494	—	553,326
Cash end of year	\$ 1,687	\$ 71,955	\$ 769,300	\$ —	\$ 842,942

- (1) Dividends paid are included in net cash provided by (used for) operating activities in the ACGL (Parent Guarantor) and/or Arch-U.S. (Subsidiary Issuer) columns.

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

	Year Ended December 31, 2015				
Condensed Consolidating Statement of Cash Flows	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Operating Activities					
Net Cash Provided By (Used For) Operating Activities	\$ 404,144	\$ 5,505	\$ 1,074,021	\$ (485,764)	\$ 997,906
Investing Activities					
Purchases of fixed maturity investments	—	(3,505)	(29,448,368)	—	(29,451,873)
Purchases of equity securities	(8,070)	—	(507,343)	—	(515,413)
Purchases of other investments	—	—	(1,749,525)	—	(1,749,525)
Proceeds from the sales of fixed maturity investments	—	24,507	28,069,540	—	28,094,047
Proceeds from the sales of equity securities	—	—	564,011	—	564,011
Proceeds from the sales, redemptions and maturities of other investments	—	—	1,250,883	—	1,250,883
Proceeds from redemptions and maturities of fixed maturity investments	—	—	748,529	—	748,529
Net settlements of derivative instruments	—	—	(5,056)	—	(5,056)
Proceeds from investment in joint venture	—	—	40,000	—	40,000
Net (purchases) sales of short-term investments	57	(338)	169,376	—	169,095
Change in cash collateral related to securities lending	—	—	(6,662)	—	(6,662)
Contributions to subsidiaries	(10,000)	—	(49,348)	59,348	—
Intercompany loans issued	—	(39,500)	(27,500)	67,000	—
Purchase of business, net of cash acquired	—	—	818	—	818
Purchases of fixed assets	(80)	—	(15,656)	—	(15,736)
Change in other assets	—	—	(36,993)	—	(36,993)
Net Cash Provided By (Used For) Investing Activities	(18,093)	(18,836)	(1,003,294)	126,348	(913,875)
Financing Activities					
Purchases of common shares under share repurchase program	(365,383)	—	—	—	(365,383)
Proceeds from common shares issued, net	4,861	—	59,348	(59,348)	4,861
Proceeds from intercompany borrowings	—	27,500	39,500	(67,000)	—
Proceeds from borrowings	—	—	431,362	—	431,362
Change in cash collateral related to securities lending	—	—	6,662	—	6,662
Dividends paid to redeemable noncontrolling interests	—	—	(19,263)	956	(18,307)
Dividends paid to parent (1)	—	—	(484,808)	484,808	—
Other	—	67	(41,980)	—	(41,913)
Preferred dividends paid	(21,938)	—	—	—	(21,938)
Net Cash Provided By (Used For) Financing Activities	(382,460)	27,567	(9,179)	359,416	(4,656)
Effects of exchange rates changes on foreign currency cash	—	—	(11,751)	—	(11,751)
Increase (decrease) in cash	3,591	14,236	49,797	—	67,624
Cash beginning of year	3,218	2,787	479,697	—	485,702
Cash end of year	\$ 6,809	\$ 17,023	\$ 529,494	\$ —	\$ 553,326

- (1) Dividends paid are included in net cash provided by (used for) operating activities in the ACGL (Parent Guarantor) and/or Arch-U.S. (Subsidiary Issuer) columns.

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Year Ended December 31, 2014

Condensed Consolidating Statement of Cash Flows	ACGL (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other ACGL Subsidiaries	Consolidating Adjustments and Eliminations	ACGL Consolidated
Operating Activities					
Net Cash Provided By (Used For) Operating Activities	\$ 467,091	\$ 8,142	\$ 1,077,597	\$ (515,700)	\$ 1,037,130
Investing Activities					
Purchases of fixed maturity investments	—	(78,509)	(28,666,770)	—	(28,745,279)
Purchases of equity securities	—	—	(520,817)	—	(520,817)
Purchases of other investments	—	—	(1,590,648)	—	(1,590,648)
Proceeds from the sales of fixed maturity investments	—	16,011	26,807,178	—	26,823,189
Proceeds from the sales of equity securities	—	—	411,362	—	411,362
Proceeds from the sales, redemptions and maturities of other investments	—	—	941,798	—	941,798
Proceeds from redemptions and maturities of fixed maturity investments	—	—	762,995	—	762,995
Net settlements of derivative instruments	—	—	34,372	—	34,372
Net (purchases) sales of short-term investments	2,423	408,591	166,112	—	577,126
Change in cash collateral related to securities lending	—	—	57,470	—	57,470
Contributions to subsidiaries	—	(341,707)	(128,825)	470,532	—
Intercompany loans issued	—	(7,500)	31,464	(23,964)	—
Purchase of business, net of cash acquired	—	—	(237,106)	—	(237,106)
Purchases of fixed assets	(271)	—	(19,612)	—	(19,883)
Net Cash Provided By (Used For) Investing Activities	2,152	(3,114)	(1,951,027)	446,568	(1,505,421)
Financing Activities					
Purchases of common shares under share repurchase program	(454,137)	—	—	—	(454,137)
Proceeds from common shares issued, net	6,827	—	470,532	(470,532)	6,827
Proceeds from intercompany borrowings	—	7,500	7,500	(15,000)	—
Repayments of intercompany borrowings	—	(10,250)	(28,714)	38,964	—
Change in cash collateral relating to securities lending	—	—	(57,470)	—	(57,470)
Third party investment in non-redeemable	—	—	796,903	—	796,903
Third party investment in redeemable	—	—	219,233	—	219,233
Dividends paid to redeemable noncontrolling	—	—	(14,448)	—	(14,448)
Dividends paid to parent (1)	—	—	(515,700)	515,700	—
Other	—	—	64,973	—	64,973
Preferred dividends paid	(21,938)	—	—	—	(21,938)
Net Cash Provided By (Used For) Financing Activities	(469,248)	(2,750)	942,809	69,132	539,943
Effects of exchange rates changes on foreign currency cash	—	—	(20,007)	—	(20,007)
Increase (decrease) in cash	(5)	2,278	49,372	—	51,645
Cash beginning of year	3,223	509	430,325	—	434,057
Cash end of year	\$ 3,218	\$ 2,787	\$ 479,697	\$ —	\$ 485,702

- (1) Dividends paid are included in net cash provided by (used for) operating activities in the ACGL (Parent Guarantor) and/or Arch-U.S. (Subsidiary Issuer) columns.

26. Subsequent Event

In January 2017, the Company and Kelso & Company (“Kelso”) sponsored Premia Re, a newly-formed multi-line Bermuda reinsurance company. Premia Re’s strategy is to reinsure or acquire companies or reserve portfolios in the non-life property and casualty insurance and reinsurance run-off market. Arch Re Bermuda and certain Arch co-investors invested \$100.0 million and acquired approximately 25% of Premia Re as well as warrants to purchase additional common equity. Affiliates of Kelso invested \$300.0 million and acquired the balance of Premia Re as well as warrants to purchase additional common equity. Arch Re Bermuda will provide a 25% whole account quota share reinsurance treaty on business written by Premia Re, and subsidiaries of ACGL will provide certain administrative and support services to Premia Re, in each case pursuant to separate multi-year agreements. Arch Re Bermuda has appointed two directors to serve on the seven person board of directors of Premia Re. The Company has performed an analysis of Premia Re and concluded that it has significant influence over Premia Re and will therefore account for its investment in Premia Re under the equity method of accounting.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

In connection with the filing of this Form 10-K, our management, including the Chief Executive Officer and Chief Financial Officer, conducted an evaluation, as of December 31, 2016, for the purposes set forth in the applicable rules under the Securities and Exchange Act of 1934, as amended (the “Exchange Act”). Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures are effective.

We continue to enhance our operating procedures and internal controls (including information technology initiatives and controls over financial reporting) to effectively support our business and our regulatory and reporting requirements. Our management does not expect that our disclosure controls or our internal controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. As a result of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons or by collusion of two or more people. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. As a result of the inherent limitations in a cost-effective control system, misstatement due to error or fraud may occur and not be detected. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the disclosure controls and procedures are met.

Management’s Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2016. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission in *Internal Control-Integrated Framework (2013)*.

On December 31, 2016, we acquired all of the issued and outstanding capital stock of UGC. As allowed under SEC guidance, management’s assessment of and conclusion regarding the design and effectiveness of internal control over financial reporting excluded the internal control over financial reporting of UGC, which is relevant to the Company’s 2016 consolidated financial statements as of and for the year ended December 31, 2016. UGC represents 15.8% of total assets, and 0.0% of our total revenues as of and for the year ended December 31, 2016. The financial reporting systems of UGC have not yet been fully integrated into our financial reporting systems and, as such, we did not have the practical ability to perform an assessment of UGC’s internal control over financial reporting in time for this current year-end. Management expects to complete the process of integrating UGC’s internal control over financial reporting over the course of 2017. The UGC acquisition represents a material change in internal control over financial reporting as defined in Exchange Act Rule 13a-15(f) during the quarter ended December 31, 2016.

Based on our assessment, management determined that, as of December 31, 2016, our internal control over financial reporting was effective. The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report included in Item 8.

Changes in Internal Control Over Financial Reporting

There have been no changes in internal control over financial reporting that occurred in connection with our evaluation required pursuant to Rules 13a-15 and 15d-15 under the Exchange Act during the fiscal quarter ended December 31, 2016, other than the UGC acquisition noted above, that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

Disclosure of Certain Activities Under Section 13(r) of the Securities Exchange Act of 1934

Section 13(r) of the Securities Exchange Act of 1934, as amended, requires an issuer to disclose in its annual or quarterly reports whether it or an affiliate knowingly engaged in certain activities described in that section, including certain activities related to Iran during the period covered by the report.

Effective January 16, 2016, the Office of Foreign Assets Control of the U.S. Department of the Treasury adopted General License H which authorizes non-U.S. entities that are owned or controlled by a U.S. person to engage in certain activities with Iran so long as they comply with certain specific requirements set forth therein.

As and when allowed by the applicable law and regulations, certain of our non-U.S. subsidiaries provide global marine and energy policies and global marine reinsurance which may have some exposure to Iran. The global marine policies and reinsurance provide coverage for vessels navigating into and out of ports worldwide. In light of European Union and U.S. modifications to Iran sanctions this year, including the issuance of General License H, and consistent with General License H, we have been notified by our intermediaries for this business that certain of our policyholders have begun to, or will begin to, ship cargo to and from Iran, and that such cargo may include transporting crude oil from Iran to another country. We are unable to attribute gross revenues or net profits from these policies to activities relating to Iran. To the extent permitted by applicable law, we currently intend for our non-U.S. subsidiaries to continue to provide such coverage.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item is incorporated by reference from the information to be included in our definitive proxy statement ("Proxy Statement") for our annual meeting of shareholders to be held in 2016, which we intend to file with the SEC pursuant to Regulation 14A before May 1, 2017. Copies of our code of ethics applicable to our chief executive officer, chief financial officer and principal accounting officer or controller are available free of charge to investors upon written request addressed to the attention of ACGL's corporate secretary, Waterloo House, 100 Pitts Bay Road, Pembroke HM 08, Bermuda. In addition, our code of ethics and certain other basic corporate documents, including the charters of our audit committee, compensation committee and nominating committee are posted on our website. If any substantive amendments are made to the code of ethics or if there is a grant of a waiver, including any implicit waiver, we will disclose the nature of such amendment or waiver on our website or in a report on Form 8-K, to the extent required by applicable law or the rules and regulations of any exchange applicable to us. Our website address is intended to be an inactive, textual reference only and none of the material on our website is incorporated by reference into this report.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference from the information to be included in the Proxy Statement which we intend to file pursuant to Regulation 14A with the SEC before May 1, 2017, which Proxy Statement is incorporated by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Other than the information set forth below, the information required by this item is incorporated by reference from the information to be included in the Proxy Statement which we intend to file pursuant to Regulation 14A with the SEC before April 30, 2017, which Proxy Statement is incorporated by reference.

The following information is as of December 31, 2016:

<u>Plan Category</u>	<u>Column A</u>	<u>Column B</u>	<u>Column C</u>
	Number of Securities to be Issued Upon Exercise of Outstanding Stock Options(1), Warrants and Rights	Weighted-Average Exercise Price of Outstanding Stock Options(1), Warrants and Rights (\$)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column A)
Equity compensation plans approved by security holders	7,253,955	\$ 43.74	4,490,955
Equity compensation plans not approved by security holders	—	—	—
Total	7,253,955	\$ 43.74	4,490,955 (2)

- (1) Includes all vested and unvested stock options outstanding of 6,872,494 and restricted stock units outstanding of 381,461. The weighted average exercise price does not take into account restricted stock units. In addition, the weighted average remaining contractual life of the Company's outstanding exercisable stock options and SARs at December 31, 2016 was 5.5 years.
- (2) Includes 1,383,896 common shares remaining available for future issuance under our Employee Share Purchase Plan and 3,107,059 common shares remaining available for future issuance under our equity compensation plans. Shares available for future issuance under our equity compensation plans may be issued in the form of stock options, SARs, restricted shares, restricted share units payable in common shares or cash, share awards in lieu of cash awards, dividend equivalents, performance shares and performance units and other share-based awards. In addition, 1,680,257 common shares, or 54.1% of the 3,107,059 common shares remaining available for future issuance may be issued in connection with full value awards (*i.e.*, awards other than stock options or SARs).

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated by reference from the information to be included in the Proxy Statement which we intend to file pursuant to Regulation 14A with the SEC before May 1, 2017, which Proxy Statement is incorporated by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item is incorporated by reference from the information to be included in our Proxy Statement which we intend to file pursuant to Regulation 14A with the SEC before May 1, 2017, which Proxy Statement is incorporated by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Financial Statements, Financial Statement Schedules and Exhibits.

1. Financial Statements

Included in Part II – see Item 8 of this report.

2. Financial Statement Schedules

	<u>Page No.</u>
III. Supplementary Insurance Information	
For the years ended December 31, 2016, 2015 and 2014	209
IV. Reinsurance	
For the years ended December 31, 2016, 2015 and 2014	210
VI. Supplementary Information for Property and Casualty Insurance Underwriters	
For the years ended December 31, 2016, 2015 and 2014	211

Schedules other than those listed above are omitted for the reason that they are not applicable or the information is provided in Item 8 of this report.

3. Exhibits

Exhibit No.	Description
3.1	Memorandum of Association of ACGL(b)
3.2	Bye-Laws of ACGL(pp)
3.3	ACGL Certificate of Deposit of Memorandum of Increase of Share Capital(u)
4.1.1	Certificate of Designations of Series C Non-Cumulative Preferred Shares(x)
4.1.2	Certificate of Designations of Series D Preferred Shares (filed herewith)
4.1.3	Certificate of Designations of Series E Non-Cumulative Preferred Shares(rr)
4.2.1	Specimen Common Share Certificate(c)
4.2.2	Specimen Series C Non-Cumulative Preferred Share Certificate(x)
4.2.3	Specimen Series E Non-Cumulative Preferred Share Certificate(rr)
4.3	Indenture and First Supplemental Indenture, dated as of May 4, 2004, between ACGL, as issuer, and JPMorgan Chase Bank, N.A. (formerly JPMorgan Chase Bank) (“JPMCB”) , as trustee(h)
4.3	Indenture and First Supplemental Indenture, dated as of December 13, 2013, between Arch Capital Group (U.S.) Inc. (“Arch U.S.”), as issuer, ACGL, as guarantor, and The Bank of New York Mellon, as trustee(gg)
4.4	Deposit Agreement, dated September 29, 2016, between ACGL, as issuer, and American Stock Transfer & Trust Company, LLC, as depositary, registrar and transfer agent and as dividend disbursing agent and redemption agent, and the holders from time to time of the depositary receipts(rr)
4.5	Form of Depositary Receipt(rr)
4.6	Indenture and First Supplemental Indenture, dated as of December 8, 2016, between Arch Capital Finance LLC, as issuer, ACGL, as guarantor, and The Bank of New York Mellon, as trustee(ss)
4.7	Investor Rights Agreement, dated as of December 31, 2016, between ACGL and American International Group, Inc. (filed herewith)
10.1.1	ACGL 2002 Long Term Incentive and Share Award Plan (“2002 Plan”)(e)†
10.1.2	First Amendment to the 2002 Plan(f)†
10.1.3	Second Amendment to the 2002 Plan(q)†
10.2	Third Amended and Restated ACGL Incentive Compensation Plan(pp)†
10.3.1	ACGL 2007 Long Term Incentive and Share Award Plan(m)†
10.3.2	ACGL 2012 Long Term Incentive and Share Award Plan(w)†
10.3.4	ACGL 2015 Long Term Incentive and Share Award Plan(ll)†
10.3.5	ACGL Amended and Restated 2007 Employee Share Purchase Plan(oo)†
10.4.1	Restricted Share Unit Agreement with ACGL-Constantine Iordanou-February 20, 2003 grant (“February RSU Agreement”)(g), First Amendment to February RSU Agreement-December 9, 2008 grant(q) and Second Amendment to February RSU Agreement-July 9, 2009 grant(r)†
10.4.2	Restricted Share Unit Agreement with ACGL-Mark D. Lyons-May 9, 2008 grant(p), May 6, 2009 grant(s), May 5, 2010 grant (t), May 6, 2011 grant(v) and May 9, 2012 grant(aa)†
10.4.3	Restricted Share Unit Agreement with ACGL-David McElroy-September 6, 2012 grant(ee) and May 9, 2013 grant(ff)†
10.4.4	Restricted Share Agreement with ACGL-Mark D. Lyons-September 6, 2012 grant(ee)†
10.4.5	Restricted Share Agreements with ACGL substantially in the form signed by each of Constantine Iordanou, Louis T. Petrillo, W. Preston Hutchings and Marc Grandisson-November 12, 2012 grants(ee)†
10.4.6	Restricted Share Agreements with ACGL substantially in the form signed by each of Constantine Iordanou, Louis T. Petrillo, W. Preston Hutchings, David H. McElroy and Marc Grandisson-May 9, 2012 grant(aa)†
10.4.7	Restricted Share Agreements with ACGL substantially in the form signed by each of Constantine Iordanou, Louis T. Petrillo, W. Preston Hutchings, Mark D. Lyons and Marc Grandisson-May 9, 2013 grants(ff)†
10.4.8	Restricted Share Agreement with ACGL. substantially in the form signed by the Non-Employee Directors of ACGL-May 9, 2014 grants(ii)†
10.4.9	Restricted Share Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Mark D. Lyons, Marc Grandisson, W. Preston Hutchings and Louis T. Petrillo-May 13, 2014 grants(ii)†
10.4.10	Restricted Share Unit Agreement with ACGL-David McElroy-May 13, 2014 grant(ii)†
10.4.11	Restricted Share Agreement with ACGL substantially in the form signed by each of Louis J. Paglia and Eugene S. Sunshine-July 14, 2014 grants(kk)†
10.4.12	Restricted Share Agreement with ACGL-Marc Grandisson-November 6, 2014 grant(mm)†

10.4.13	Restricted Share Agreement with ACGL substantially in the form signed by the Non-Employee Directors of ACGL-May 7, 2015 grants(nn)†
10.4.14	Restricted Share Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Mark D. Lyons, Marc Grandisson, W. Preston Hutchings, David McElroy and Louis T. Petrillo-May 13, 2015 grants(nn)†
10.4.15	Restricted Share Unit Agreement with ACGL-David McElroy-May 13, 2015 grant(nn)†
10.4.16	Restricted Share Agreement with ACGL substantially in the form signed by the Non-Employee Directors of ACGL-May 6, 2016 grants(pp)†
10.4.17	Restricted Share Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Mark D. Lyons, Marc Grandisson, W. Preston Hutchings, David McElroy and Louis T. Petrillo-May 13, 2016 grants(pp)†
10.4.18	Restricted Share Unit Agreement with ACGL-David McElroy-May 13, 2016(pp)†
10.5.1	Stock Option Agreement with ACGL-Marc Grandisson-November 15, 2005 grant(k)†
10.5.2	Stock Option Agreements with ACGL and Constantine Iordanou, John D. Vollaro and Marc Grandisson-February 23, 2006 grants(l)†
10.5.3	Stock Option Agreement with ACGL-W. Preston Hutchings-February 23, 2006 grant(l)†
10.5.4	Non-Qualified Stock Option Agreement with Constantine Iordanou, Mark D. Lyons, Marc Grandisson, W. Preston Hutchings, David McElroy and Louis T. Petrillo-May 13, 2015 grants(nn)†
10.5.5	Non-Qualified Stock Option Agreement with Constantine Iordanou, Mark D. Lyons, Marc Grandisson, W. Preston Hutchings, David McElroy and Louis T. Petrillo-May 13, 2016 grants(pp)†
10.5.6	Non-Qualified Stock Option Agreement with Constantine Iordanou -February 26, 2016 grants(pp)†
10.6.1	Share Appreciation Right Agreement with ACGL substantially in the form signed by Louis T. Petrillo and W. Preston Hutchings-May 11, 2007 grants(n)†
10.6.2	Share Appreciation Right Agreement with ACGL substantially in the form signed by Constantine Iordanou, John D. Vollaro and Marc Grandisson-May 11, 2007 grants(n)†
10.6.3	Share Appreciation Right Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, John D. Vollaro, Marc Grandisson, W. Preston Hutchings, Mark D. Lyons and Louis T. Petrillo-May 9, 2008 grants(p)†
10.6.4	Share Appreciation Right Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Marc Grandisson, W. Preston Hutchings, Mark D. Lyons, John D. Vollaro and Louis T. Petrillo-May 6, 2009 grants(s)†
10.6.5	Share Appreciation Right Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Marc Grandisson, W. Preston Hutchings, Mark D. Lyons and Louis T. Petrillo-May 5, 2010 grants(t) May 6, 2011 grants(v), May 9, 2012 grants(aa) and May 9, 2013 grants (includes David H. McElroy)(ff)†
10.6.6	Share Appreciation Right Agreement with ACGL-Constantine Iordanou-February 25, 2010 grant(aa),February 29, 2012 grant (aa) and September 6, 2012 grants(ee)†
10.6.7	Share Appreciation Right Agreement with ACGL-David H. McElroy-June 8, 2009 grant(cc) and September 6, 2012 grants(ee)†
10.6.8	Share Appreciation Right Agreement with ACGL-Mark D. Lyons-September 6, 2012 grant(ee)†
10.6.9	Share Appreciation Right Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Marc Grandisson, W. Preston Hutchings and Louis T. Petrillo-November 12, 2012 grants(ee)†
10.6.10	Share Appreciation Right Agreement with ACGL substantially in the form signed by each of Constantine Iordanou, Mark D. Lyons, Marc Grandisson, W. Preston Hutchings, David McElroy and Louis T. Petrillo for May 13, 2014 grants(ii)†
10.6.11	Share Appreciation Right Agreement with ACGL-Mark D. Lyons-February 28, 2014 grant(ii)†
10.6.12	Share Appreciation Right Agreement with ACGL-Constantine Iordanou-February 28, 2014 grant(ii)†
10.6.13	Share Appreciation Right Agreement with ACGL-Marc Grandisson-November 6, 2014 grant(mm)†
10.6.14	Share Appreciation Right Agreement with ACGL- Constantine Iordanou-February 27, 2015(pp)†
10.7	Employment and Change in Control Agreement, dated as of May 5, 2000, between ACGL and Louis T. Petrillo(a) and Amendment to Change in Control Agreement, dated as of December 31, 2008(q)†
10.8	Employment Agreement, dated as of October 23, 2001, among ACGL, Arch Re Bermuda and Marc Grandisson(d), First Amendment to same, dated as of November 16, 2005(k) and Second Amendment to same, dated as of November 24, 2008(q)†
10.9	Employment Letter Agreement, dated as of May 29, 2005, between ACGL and W. Preston Hutchings(j) and Amendment to same, dated as of May 21, 2008(o)†
10.10	Employment Agreement, dated as of July 25, 2012, between ACGL and Mark D. Lyons(y)†
10.11	Employment Agreement, dated as of June 5, 2009, between Arch Insurance Group Inc. and David McElroy(z) and Amendment to same, dated as of July 25, 2012(z)†
10.12.	Amended and Restated Employment Agreement, dated October 1, 2014, between ACGL and Constantine Iordanou(jj)†
10.13.1	Employment Agreement, dated as of September 17, 2003, between ACGL and John D. Vollaro(g)†

10.13.2	Amendment to Employment Agreement, dated February 27, 2015, between ACGL and John D. Vollaro(mm)†
10.14	Assumption of Change in Control Agreements(c)†
10.15	Arch U.S. Executive Supplemental Non-Qualified Savings and Retirement Plan(q)†
10.16	Asset Purchase Agreement, dated as of February 7, 2013 (“PMI Asset Purchase Agreement”), by and among the Receiver of PMI Mortgage Insurance Co. in Rehabilitation on behalf of PMI Mortgage Insurance Co. (the “Receiver”), Arch U.S. MI Services Inc. and Arch U.S.(bb) and the Amendment No.1, dated as of May 31, 2013, to the PMI Asset Purchase Agreement (dd)
10.17	Stock Purchase Agreement, dated as of February 7, 2013 (“CMG Stock Purchase Agreement”), by and among the Receiver, CMFG Life Insurance Company, CMG Mortgage Insurance Company, Arch U.S. MI Holdings Inc. and Arch U.S.(bb) and Amendment No. 1, dated as of May 31, 2013, to the CMG Stock Purchase Agreement(dd)
10.18	Stock Purchase Agreement, dated as of August 15, 2016, between ACGL and American International Group, Inc.(qq)
10.19	Second Amended and Restated Credit Agreement, dated as of October 26, 2016, by and among ACGL., certain of its subsidiaries as subsidiary borrowers, Bank of America, N.A., as Administrative Agent, Fronting Bank and L/C Administrator, and the lenders party thereto(hh)
12	Statement regarding computation of ratios (filed herewith)
18	Letter of PricewaterhouseCoopers LLP, dated March 1, 2017, relating to change in accounting principle (filed herewith)
21	Subsidiaries of Registrant (filed herewith)
23	Consent of PricewaterhouseCoopers LLP (filed herewith)
24	Power of Attorney (filed herewith)
25	Form T-1 Statement of Eligibility of Trustee(i)(gg)
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
101	The following financial information from ACGL’s Annual Report on Form 10-K for the year ended December 31, 2016 formatted in XBRL: (i) Consolidated Balance Sheets at December 31, 2016 and 2015; (ii) Consolidated Statements of Income for the years ended December 31, 2016, 2015 and 2014; (iii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2016, 2015 and 2014; (iv) Consolidated Statements of Changes in Shareholders’ Equity for the years ended December 31, 2016, 2015 and 2014; (v) Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015 and 2014; and (vi) Notes to Consolidated Financial Statements (filed herewith)
(a)	Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on September 8, 2000, and incorporated by reference.
(b)	Filed as an annex to our Definitive Proxy Statement/Prospectus included in our Registration Statement on Form S-4 (No. 333-45418), as filed with the SEC on September 26, 2000, and incorporated by reference.
(c)	Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2000, as filed with the SEC on April 2, 2001, and incorporated by reference.
(d)	Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on January 4, 2002, and incorporated by reference.
(e)	Filed as an exhibit to our Report on Form 10-Q for the period ended June 30, 2002, as filed with the SEC on August 14, 2002, and incorporated by reference.
(f)	Filed as an exhibit to our Report on Form 10-Q for the period ended September 30, 2003, as filed with the SEC on November 12, 2003, and incorporated by reference.
(g)	Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2003, as filed with the SEC on March 10, 2004, and incorporated by reference.
(h)	Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on May 7, 2004, and incorporated by reference.
(i)	Revised form of agreement originally filed as an exhibit to our Report on Form 8-K, as filed with the SEC on September 28, 2004, and incorporated by reference.
(j)	Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on June 9, 2005, and incorporated by reference.
(k)	Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2005, as filed with the SEC on March 13, 2006, and incorporated by reference.
(l)	Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2006, as filed with the SEC on November 9, 2006, and incorporated by reference.
(m)	Filed as an appendix to our Definitive Proxy Statement, as filed with the SEC on April 3, 2007, and incorporated by reference.
(n)	Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2007, as filed with the SEC on February 29, 2008, and incorporated by reference.

- (o) Filed as an exhibit to our Report on Form 10-Q for the period ending June 30, 2008, as filed with the SEC on August 8, 2008, and incorporated by reference.
- (p) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2008, as filed with the SEC on November 10, 2008, and incorporated by reference.
- (q) Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2008, as filed with the SEC on March 2, 2009, and incorporated by reference.
- (r) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2009, as filed with the SEC on November 9, 2009, and incorporated by reference.
- (s) Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2009, as filed with the SEC on February 26, 2010, and incorporated by reference.
- (t) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2010, as filed with the SEC on November 8, 2010, and incorporated by reference.
- (u) Filed as an exhibit to our Annual Report on Form 10-K for the period ending December 31, 2010, as filed with the SEC on February 28, 2011, and incorporated by reference.
- (v) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2011, as filed with the SEC on November 8, 2011, and incorporated by reference.
- (w) Filed as an appendix to our Definitive Proxy Statement, as filed with the SEC on March 27, 2012, and incorporated by reference.
- (x) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on April 2, 2012, and incorporated by reference.
- (y) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on July 30, 2012, and incorporated by reference.
- (z) Filed as an exhibit to our Report on Form 10-Q for the period ending June 30, 2012, as filed with the SEC on August 8, 2012, and incorporated by reference.
- (aa) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2012, as filed with the SEC on November 9, 2012, and incorporated by reference.
- (bb) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on February 8, 2013, and incorporated by reference.
- (cc) Filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2012, as filed with the SEC on March 1, 2013, and incorporated by reference.
- (dd) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on June 5, 2013, and incorporated by reference.
- (ee) Filed as an exhibit to our Report on Form 10-Q for the period ending June 30, 2013, as filed with the SEC on August 9, 2013, and incorporated by reference.
- (ff) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2013, as filed with the SEC on November 8, 2013, and incorporated by reference.
- (gg) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on December 13, 2013, and incorporated by reference.
- (hh) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on October 26, 2016, and incorporated by reference.
- (ii) Filed as an exhibit to our Report on Form 10-Q for the period ending June 30, 2014, as filed with the SEC on August 8, 2014, and incorporated by reference.
- (jj) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on October 6, 2014, and incorporated by reference.
- (kk) Filed as an exhibit to our Report on Form 10-Q for the period ending September 30, 2014, as filed with the SEC on November 7, 2014, and incorporated by reference.
- (ll) Filed as an appendix to our Definitive Proxy Statement, as filed with the SEC on March 26, 2015, and incorporated by reference.
- (mm) Filed as an exhibit to our Report on Form 10-Q for the period ending March 31, 2015, as filed with the SEC on May 8, 2015, and incorporated by reference.
- (nn) Filed as an exhibit to our Report on Form 10-Q for the period ending June 30, 2015, as filed with the SEC on August 7, 2015, and incorporated by reference.
- (oo) Filed as an appendix to our Definitive Proxy Statement, as filed with the SEC on March 23, 2016, and incorporated by reference.
- (pp) Filed as an exhibit to our Report on Form 10-Q for the period ending June 30, 2016, as filed with the SEC on August 5, 2016, and incorporated by reference.
- (qq) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on August 16, 2016, and incorporated by reference.
- (rr) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on September 29, 2016, and incorporated by reference.
- (ss) Filed as an exhibit to our Report on Form 8-K, as filed with the SEC on December 9, 2016, and incorporated by reference.

† Management contract or compensatory plan or arrangement.

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.

ARCH CAPITAL GROUP LTD.
(Registrant)

By: /s/ Constantine Iordanou

Name: Constantine Iordanou

Title: *Chairman of the Board of Directors and
Chief Executive Officer*

March 1, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Constantine Iordanou</u> Constantine Iordanou	Chairman of the Board of Directors and Chief Executive Officer (Principal Executive Officer)	March 1, 2017
<u>/s/ Mark D. Lyons</u> Mark D. Lyons	Executive Vice President, Chief Financial Officer and Treasurer (Principal Financial and Principal Accounting Officer)	March 1, 2017
<u>*</u> John L. Bunce, Jr.	Director	March 1, 2017
<u>*</u> Eric W. Doppstadt	Director	March 1, 2017
<u>*</u> Kewsong Lee	Director	March 1, 2017
<u>*</u> Yiorgos Lillikas	Director	March 1, 2017

<u>Name</u>	<u>Title</u>	<u>Date</u>
*		
<hr/> Louis J. Paglia	Director	March 1, 2017
*		
<hr/> John M. Pasquesi	Director	March 1, 2017
*		
<hr/> Brian S. Posner	Director	March 1, 2017
*		
<hr/> Eugene S. Sunshine	Director	March 1, 2017
*		
<hr/> John D. Vollaro	Director	March 1, 2017

* By Mark D. Lyons, as attorney-in-fact and agent, pursuant to a power of attorney, a copy of which has been filed with the Securities and Exchange Commission as Exhibit 24 to this report.

/s/ Mark D. Lyons

Name: Mark D. Lyons
Attorney-in-Fact

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
SUPPLEMENTARY INSURANCE INFORMATION
(U.S. dollars in thousands)

	Deferred Acquisition Costs	Reserves for Losses and Loss Adjustment Expenses	Unearned Premiums	Net Premiums Earned	Net Investment Income (1)	Net Losses and Loss Adjustment Expenses Incurred	Amortization of Deferred Acquisition Costs	Other Operating Expenses (2)	Net Premiums Written
December 31, 2016									
Insurance	\$152,983	\$6,502,745	\$1,403,822	\$2,073,904	NM	\$1,359,313	\$304,066	\$353,782	\$2,072,281
Reinsurance	121,806	2,506,239	532,759	1,056,232	NM	475,762	212,375	143,408	1,053,856
Mortgage	86,392	681,167	1,176,809	286,716	NM	28,943	32,065	101,293	391,466
Other	86,379	510,809	293,480	467,970	NM	321,581	129,527	25,163	513,788
Total	\$447,560	\$10,200,960	\$3,406,870	\$3,884,822	NM	\$2,185,599	\$678,033	\$623,646	\$4,031,391
December 31, 2015									
Insurance	\$131,081	\$6,217,777	\$1,364,000	\$2,044,808	NM	\$1,292,647	\$299,317	\$354,416	\$2,045,671
Reinsurance	123,226	2,506,441	531,385	1,077,135	NM	440,350	223,632	155,811	1,038,408
Mortgage	53,079	110,035	188,567	214,110	NM	40,247	45,076	82,370	267,493
Other	75,443	290,997	249,980	397,852	NM	277,659	113,451	14,919	465,959
Total	\$382,829	\$9,125,250	\$2,333,932	\$3,733,905	NM	\$2,050,903	\$681,476	\$607,516	\$3,817,531
December 31, 2014									
Insurance	\$142,703	\$6,204,523	\$1,337,934	\$2,017,370	NM	\$1,260,953	\$316,308	\$335,157	\$2,146,654
Reinsurance	133,324	2,647,341	582,341	1,279,328	NM	532,450	261,438	147,964	1,265,991
Mortgage	38,321	118,256	131,289	193,573	NM	55,674	49,400	66,891	204,837
Other	49,529	66,328	180,014	103,477	NM	70,173	30,116	6,268	274,456
Total	\$363,877	\$9,036,448	\$2,231,578	\$3,593,748	NM	\$1,919,250	\$657,262	\$556,280	\$3,891,938

- (1) The Company does not manage its assets by segment and, accordingly, net investment income is not allocated to each underwriting segment. See Note 5 for information related to the 'other' segment.
- (2) Certain other operating expenses relate to the Company's corporate segment (non-underwriting). Such amounts are not reflected in the table above. See Note 5.

Note: Balance sheet items reflect the acquisition of UGC on December 31, 2016.

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
REINSURANCE
(U.S. dollars in thousands)

	<u>Gross Amount</u>	<u>Ceded to Other Companies (1)</u>	<u>Assumed From Other Companies (1)</u>	<u>Net Amount</u>	<u>Percentage of Amount Assumed to Net</u>
Year Ended December 31, 2016					
Premiums Written:					
Insurance	\$ 2,999,106	\$ (954,768)	\$ 27,943	\$ 2,072,281	1.3 %
Reinsurance	62,427	(440,541)	1,431,970	1,053,856	135.9 %
Mortgage	209,351	(108,259)	290,374	391,466	74.2 %
Other	66,806	(21,306)	468,288	513,788	91.1 %
Total	<u>\$ 3,337,690</u>	<u>\$ (1,170,743)</u>	<u>\$ 1,864,444</u>	<u>\$ 4,031,391</u>	<u>46.2 %</u>
Year Ended December 31, 2015					
Premiums Written:					
Insurance	\$ 2,908,906	\$ (898,347)	\$ 35,112	\$ 2,045,671	1.7 %
Reinsurance	28,510	(380,614)	1,390,512	1,038,408	133.9 %
Mortgage	137,338	(28,064)	158,219	267,493	59.1 %
Other	12,165	(22,940)	476,734	465,959	102.3 %
Total	<u>\$ 3,086,919</u>	<u>\$ (979,632)</u>	<u>\$ 1,710,244</u>	<u>\$ 3,817,531</u>	<u>44.8 %</u>
Year Ended December 31, 2014					
Premiums Written:					
Insurance	\$ 2,974,996	\$ (862,015)	\$ 33,673	\$ 2,146,654	1.6 %
Reinsurance	22,405	(261,255)	1,504,841	1,265,991	118.9 %
Mortgage	103,545	(22,519)	123,811	204,837	60.4 %
Other	\$ 0	\$ (14,171)	\$ 288,627	\$ 274,456	105.2 %
Total	<u>\$ 3,100,946</u>	<u>\$ (948,678)</u>	<u>\$ 1,739,670</u>	<u>\$ 3,891,938</u>	<u>44.7 %</u>

- (1) Certain amounts included in the gross premiums written of each segment are related to intersegment transactions and are included in the gross premiums written of each segment. Accordingly, the sum of gross premiums written for each segment does not agree to the total gross premiums written as shown in the table above due to the elimination of intersegment transactions in the total.

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
SUPPLEMENTARY INFORMATION FOR PROPERTY AND CASUALTY INSURANCE UNDERWRITERS
(U.S. dollars in thousands)

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H		Column I	Column J	Column K
Affiliation with Registrant	Deferred Acquisition Costs	Reserves for Losses and Loss Adjustment Expenses	Discount, if any, deducted in Column C	Unearned Premiums	Net Premiums Earned	Net Investment Income	Net Losses and Loss Adjustment Expenses Incurred Related to		Amortization of Deferred Acquisition Costs	Net Paid Losses and Loss Adjustment Expenses	Net Premiums Written
							(a)	(b)			
							Current Year	Prior Years			
Consolidated Subsidiaries											
2016	\$ 447,560	\$ 10,200,960	\$ 18,246	\$ 3,406,870	\$ 3,884,822	\$ 366,742	\$ 2,455,563	\$ (269,964)	\$ 678,033	\$ 1,813,356	\$ 4,031,391
2015	382,829	9,125,250	17,161	2,333,932	3,733,905	348,090	2,336,026	(285,123)	681,476	1,869,244	3,817,531
2014	363,877	9,036,448	14,811	2,231,578	3,593,748	302,585	2,246,152	(326,902)	657,262	1,697,736	3,891,938

Note: balance sheet items reflect the acquisition of UGC on December 31, 2016.

Corporate Information

ARCH CAPITAL GROUP LTD.

Directors and Officers

Constantine Iordanou^{3, 4, 7}

Chairman and Chief Executive Officer

Marc Grandisson⁷

President and Chief Operating Officer

Mark D. Lyons⁷

Executive Vice President, Chief Financial Officer and Treasurer

David H. McElroy⁷

Chairman and Chief Executive Officer of Arch Worldwide Insurance Group

Nicolas Papadopoulos⁷

Chief Executive Officer of Arch Reinsurance Group

Andrew T. Rippert⁷

Chief Executive Officer of Global Mortgage Group

W. Preston Hutchings

Senior Vice President and Chief Investment Officer, and President of Arch Investment Management Ltd.

François Morin

Senior Vice President, Chief Risk Officer and Chief Actuary

Louis T. Petrillo

General Counsel

President of Arch Capital Services Inc.

John L. Bunce, Jr.^{2, 3, 4}

Director

Managing Director of Greyhawk Capital Management, LLC and Senior Advisor to Hellman & Friedman LLC

Eric W. Doppstadt^{4, 5}

Director

Vice President and Chief Investment Officer of the Ford Foundation

Kewsong Lee^{2, 3, 4, 5}

Lead Director

Managing Director and Partner, Deputy Chief Investment Officer of Corporate Private Equity of the Carlyle Group

Yiorgos Lillikas^{1, 6}

Director

Chief Executive Officer of BlueTree Consultants

Former Minister of Foreign Affairs of the Republic of Cyprus (E.U.) and Former Minister of Commerce, Industry and Tourism of the Republic of Cyprus

Louis J. Paglia^{1, 5, 6}

Director

Founder of Oakstone Capital LLC and Former Executive Vice President of UIL Holdings Corporation

John M. Pasquesi^{2, 3, 4, 5, 6}

Vice Chairman

Managing Member of Otter Capital LLC

Brian S. Posner^{1, 4, 6}

Director

President of Point Rider Group LLC

Eugene S. Sunshine^{1, 2, 5}

Director

Former Senior Vice President for Business and Finance at Northwestern University

John D. Vollaro^{4, 6}

Director

Senior Advisor

Former Executive Vice President, Chief Financial Officer and Treasurer

1 Audit Committee

2 Compensation Committee

3 Executive Committee

4 Finance, Investment and Risk Committee

5 Nominating Committee

6 Underwriting Oversight Committee

7 Executive Strategy Committee

SHAREHOLDER INFORMATION

Corporate Address

Waterloo House, Ground Floor
100 Pitts Bay Road
Pembroke HM 08
Bermuda
(441) 278-9250
(441) 278-9255 facsimile

Market Information

The common shares of Arch Capital Group Ltd. are listed on the NASDAQ Global Select Market under the symbol ACGL.

Transfer Agent

American Stock Transfer & Trust Company, LLC
6201 15th Avenue
Brooklyn, New York 11219

Shareholder Inquiries

Mark D. Lyons
Executive Vice President, Chief Financial Officer and Treasurer
(441) 278-9250
(441) 278-9255 facsimile

Arch Capital Group Ltd.

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Pembroke HM 08
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