ARCH CAPITAL GROUP LTD.
Form 10-Q
November 09, 2018
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2018

Or

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number: 001-16209

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

| | |
|---|---|
| Bermuda | Not applicable |
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification No.) |

| | |
|---|---|
| Waterloo House, Ground Floor<br>100 Pitts Bay Road, Pembroke HM 08, Bermuda | (441) 278-9250 |
| (Address of principal executive offices) | (Registrant’s telephone number, including area code) |

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes þ No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 such files). Yes þ No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.
Large accelerated Filer þ Accelerated Filer o Non-accelerated Filer o Smaller reporting company o Emerging growth company o
If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o
Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No þ

As of November 7, 2018, there were 404,724,220 common shares, $0.0011 par value per share, of the registrant outstanding.

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ARCH CAPITAL GROUP LTD.

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PART I. FINANCIAL INFORMATION

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” or their negative or variations or similar terminology, or 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 and elsewhere in this report and in our periodic reports filed with the Securities and Exchange Commission (the “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 any 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 September 30, 2018;
- 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 or severe economic events in our insurance, reinsurance and mortgage businesses 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;

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- 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;
- 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;
- a disruption caused by cyber-attacks or other technology breaches or failures on us or our business partners and service providers, which could negatively impact our business and/or expose us to litigation;
- statutory or regulatory developments, including as to tax 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, including the Tax Cuts and Jobs Act of 2017; 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 our Annual Report on Form 10-K for the year ended December 31, 2017, as well as the other factors set forth in our 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.

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## ITEM 1. CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Arch Capital Group Ltd.:

Results of Review of Financial Statements

We have reviewed the accompanying consolidated balance sheet of Arch Capital Group Ltd. and its subsidiaries as of September 30, 2018, the related consolidated statements of income, comprehensive income and changes in shareholders' equity for the three-month and nine-month periods ended September 30, 2018 and September 30, 2017, and the consolidated statements of cash flows for the nine-month periods ended September 30, 2018 and September 30, 2017, including the related notes (collectively referred to as the "interim financial statements"). Based on our reviews, we are not aware of any material modifications that should be made to the accompanying interim financial statements for them to be in conformity with accounting principles generally accepted in the United States of America.

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of the Company as of December 31, 2017, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and of cash flows for the year then ended (not presented herein), and in our report dated February 28, 2018, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying consolidated balance sheet as of December 31, 2017, is fairly stated, in all material respects, in relation to the consolidated balance sheet from which it has been derived.

Basis for Review Results

These interim financial statements are the responsibility of the Company's management. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We conducted our review in accordance with the standards of the PCAOB. A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
New York, NY
November 9, 2018

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(U.S. dollars in thousands, except share data)

| | (Unaudited) September 30, 2018 | December 31, 2017 |
|---|---|---|
| Assets | | |
| Investments: | | |
| Fixed maturities available for sale, at fair value (amortized cost: $14,510,474 and $13,869,460) | $ 14,331,641 | $ 13,876,003 |
| Short-term investments available for sale, at fair value (amortized cost: $961,993 and $1,468,955) | 961,799 | 1,469,042 |
| Collateral received under securities lending, at fair value (amortized cost: $306,886 and $476,605) | 306,893 | 476,615 |
| Equity securities, at fair value | 444,118 | 495,804 |
| Other investments available for sale, at fair value (cost: $0 and $198,163) | — | 264,989 |
| Investments accounted for using the fair value option | 4,097,735 | 4,216,237 |
| Investments accounted for using the equity method | 1,524,242 | 1,041,322 |
| Total investments | 21,666,428 | 21,840,012 |
| | | |
| Cash | 651,037 | 606,199 |
| Accrued investment income | 106,543 | 113,133 |
| Securities pledged under securities lending, at fair value (amortized cost: $316,147 and $463,181) | 299,409 | 464,917 |
| Premiums receivable | 1,307,466 | 1,135,249 |
| Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses | 2,749,785 | 2,540,143 |
| Contractholder receivables | 2,067,268 | 1,978,414 |
| Ceded unearned premiums | 1,011,850 | 926,611 |
| Deferred acquisition costs | 572,987 | 535,824 |
| Receivable for securities sold | 278,753 | 205,536 |
| Goodwill and intangible assets | 566,662 | 652,611 |
| Other assets | 974,346 | 1,053,009 |
| Total assets | $ 32,252,534 | $ 32,051,658 |
| | | |
| Liabilities | | |
| Reserve for losses and loss adjustment expenses | $ 11,554,321 | $ 11,383,792 |
| Unearned premiums | 3,868,379 | 3,622,314 |
| Reinsurance balances payable | 404,936 | 323,496 |
| Contractholder payables | 2,067,268 | 1,978,414 |
| Collateral held for insured obligations | 249,723 | 240,183 |
| Senior notes | 1,733,364 | 1,732,884 |
| Revolving credit agreement borrowings | 554,756 | 816,132 |
| Securities lending payable | 306,886 | 476,605 |
| Payable for securities purchased | 255,427 | 449,186 |
| Other liabilities | 819,373 | 782,717 |
| Total liabilities | 21,814,433 | 21,805,723 |
| | | |
| Commitments and Contingencies | | |
| Redeemable noncontrolling interests | 206,199 | 205,922 |

| | | |
|---|---|---|
| Shareholders' Equity | | |
| Non-cumulative preferred shares | 780,000 | 872,555 |
| Convertible non-voting common equivalent preferred shares | — | 489,627 |
| Common shares ($0.0011 par, shares issued: 570,048,156 and 549,872,226) | 633 | 611 |
| Additional paid-in capital | 1,775,499 | 1,230,617 |
| Retained earnings | 9,300,208 | 8,562,889 |
| Accumulated other comprehensive income (loss), net of deferred income tax | (221,041) | 118,044 |
| Common shares held in treasury, at cost (shares: 164,523,796 and 156,938,409) | (2,280,151) | (2,077,741) |
| Total shareholders' equity available to Arch | 9,355,148 | 9,196,602 |
| Non-redeemable noncontrolling interests | 876,754 | 843,411 |
| Total shareholders' equity | 10,231,902 | 10,040,013 |
| Total liabilities, noncontrolling interests and shareholders' equity | $32,252,534 | $32,051,658 |

See Notes to Consolidated Financial Statements

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(U.S. dollars in thousands, except share data)

| | (Unaudited) Three Months Ended September 30, | | (Unaudited) Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Revenues | | | | |
| Net premiums written | $1,333,553 | $1,325,403 | $4,044,993 | $3,850,358 |
| Change in unearned premiums | (42,675) | (63,517) | (182,453) | (230,581) |
| Net premiums earned | 1,290,878 | 1,261,886 | 3,862,540 | 3,619,777 |
| Net investment income | 144,024 | 116,459 | 406,416 | 345,457 |
| Net realized gains (losses) | (51,705) | 66,275 | (239,314) | 122,163 |
| | | | | |
| Other-than-temporary impairment losses | (492) | (1,878) | (1,124) | (5,415) |
| Less investment impairments recognized in other comprehensive income, before taxes | — | — | — | — |
| Net impairment losses recognized in earnings | (492) | (1,878) | (1,124) | (5,415) |
| | | | | |
| Other underwriting income | 5,823 | 6,064 | 15,046 | 15,519 |
| Equity in net income (loss) of investment funds accounted for using the equity method | 15,982 | 31,090 | 52,523 | 111,884 |
| Other income (loss) | (726) | (342) | 2,461 | (3,118) |
| Total revenues | 1,403,784 | 1,479,554 | 4,098,548 | 4,206,267 |
| | | | | |
| Expenses | | | | |
| Losses and loss adjustment expenses | 699,420 | 1,046,141 | 2,062,433 | 2,288,571 |
| Acquisition expenses | 201,602 | 193,854 | 595,816 | 566,579 |
| Other operating expenses | 161,098 | 170,127 | 512,294 | 514,827 |
| Corporate expenses | 14,335 | 17,098 | 52,159 | 69,766 |
| Amortization of intangible assets | 26,315 | 31,824 | 79,523 | 93,942 |
| Interest expense | 29,730 | 29,510 | 90,710 | 86,935 |
| Net foreign exchange (gains) losses | (10,838) | 28,028 | (44,823) | 86,975 |
| Total expenses | 1,121,662 | 1,516,582 | 3,348,112 | 3,707,595 |
| | | | | |
| Income (loss) before income taxes | 282,122 | (37,028) | 750,436 | 498,672 |
| Income tax expense | (33,356) | (8,189) | (78,939) | (70,755) |
| Net income (loss) | $248,766 | $(45,217) | $671,497 | $427,917 |
| Net (income) loss attributable to noncontrolling interests | (21,358) | 11,561 | (50,020) | (23,279) |
| Net income (loss) available to Arch | 227,408 | (33,656) | 621,477 | 404,638 |
| Preferred dividends | (10,402) | (12,369) | (31,242) | (34,936) |
| Loss on redemption of preferred shares | — | (6,735) | (2,710) | (6,735) |
| Net income (loss) available to Arch common shareholders | $217,006 | $(52,760) | $587,525 | $362,967 |
| | | | | |
| Net income (loss) per common share and common share equivalent | | | | |
| Basic | $0.54 | $(0.13) | $1.45 | $0.90 |
| Diluted | $0.53 | $(0.13) | $1.42 | $0.87 |

| | | | | |
|---|---|---|---|---|
| Weighted average common shares and common share equivalents outstanding | | | | |
| Basic | 402,939,092 | 404,656,353 | 405,076,228 | 403,416,387 |
| Diluted | 411,721,214 | 404,656,353 | 413,993,192 | 417,666,972 |

See Notes to Consolidated Financial Statements

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(U.S. dollars in thousands)

| | (Unaudited) Three Months Ended September 30, | | (Unaudited) Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Comprehensive Income | | | | |
| Net income (loss) | $248,766 | $(45,217) | $671,497 | $427,917 |
| 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 | (53,308) | 66,462 | (305,256) | 260,223 |
| Reclassification of net realized (gains) losses, net of income taxes, included in net income (loss) | 23,203 | (23,912) | 122,307 | (46,180) |
| Foreign currency translation adjustments | 2,063 | 8,280 | (9,250) | 29,701 |
| Comprehensive income | 220,724 | 5,613 | 479,298 | 671,661 |
| Net (income) loss attributable to noncontrolling interests | (21,358) | 11,561 | (50,020) | (23,279) |
| Other comprehensive (income) loss attributable to noncontrolling interests | 1,158 | 411 | 2,908 | 479 |
| Comprehensive income available to Arch | $200,524 | $17,585 | $432,186 | $648,861 |

See Notes to Consolidated Financial Statements

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(U.S. dollars in thousands)

| | (Unaudited) Three Months Ended September 30, | | (Unaudited) Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Non-cumulative preferred shares | | | | |
| Balance at beginning of period | $780,000 | $772,555 | $872,555 | $772,555 |
| Preferred shares issued | — | 230,000 | — | 230,000 |
| Preferred shares redeemed | — | (230,000) | (92,555) | (230,000) |
| Balance at end of period | 780,000 | 772,555 | 780,000 | 772,555 |
| | | | | |
| Convertible non-voting common equivalent preferred shares | | | | |
| Balance at beginning of period | — | 489,627 | 489,627 | 1,101,304 |
| Preferred shares converted to common shares | — | — | (489,627) | (611,677) |
| Balance at end of period | — | 489,627 | — | 489,627 |
| | | | | |
| Common shares | | | | |
| Balance at beginning of period | 633 | 609 | 611 | 582 |
| Common shares issued, net | — | 1 | 22 | 28 |
| Balance at end of period | 633 | 610 | 633 | 610 |
| | | | | |
| Additional paid-in capital | | | | |
| Balance at beginning of period | 1,760,606 | 1,196,884 | 1,230,617 | 531,687 |
| Preferred shares converted to common shares | — | — | 489,608 | 611,653 |
| Other changes | 14,893 | 16,076 | 55,274 | 69,620 |
| Balance at end of period | 1,775,499 | 1,212,960 | 1,775,499 | 1,212,960 |
| | | | | |
| Retained earnings | | | | |
| Balance at beginning of period | 9,083,202 | 8,412,114 | 8,562,889 | 7,996,701 |
| Cumulative effect of an accounting change (see Note 1) | — | — | 149,794 | (314) |
| Balance at beginning of period, as adjusted | 9,083,202 | 8,412,114 | 8,712,683 | 7,996,387 |
| Net income | 248,766 | (45,217) | 671,497 | 427,917 |
| Net (income) loss attributable to noncontrolling interests | (21,358) | 11,561 | (50,020) | (23,279) |
| Preferred share dividends | (10,402) | (12,369) | (31,242) | (34,936) |
| Loss on redemption of preferred shares | — | (6,735) | (2,710) | (6,735) |
| Balance at end of period | 9,300,208 | 8,359,354 | 9,300,208 | 8,359,354 |
| | | | | |
| Accumulated other comprehensive income (loss), net of deferred income tax | | | | |
| Balance at beginning of period | (194,157) | 78,441 | 118,044 | (114,541) |
| Unrealized appreciation (decline) in value of available-for-sale investments, net of deferred income tax: | | | | |
| Balance at beginning of period | (143,353) | 143,852 | 157,400 | (27,641) |
| Cumulative effect of an accounting change (see Note 1) | — | — | (149,794) | — |
| Balance at beginning of period, as adjusted | (143,353) | 143,852 | 7,606 | (27,641) |
| Unrealized holding gains (losses) during period, net of reclassification adj. | (30,105) | 42,550 | (182,949) | 214,043 |

| | | | | |
|---|---|---|---|---|
| Unrealized holding gains (losses) during period attrib. to noncontrolling int. | 1,238 | — | 3,123 | — |
| Balance at end of period | (172,220) | 186,402 | (172,220) | 186,402 |
| Foreign currency translation adjustments, net of deferred income tax: | | | | |
| Balance at beginning of period | (50,804) | (65,411) | (39,356) | (86,900) |
| Foreign currency translation adjustments | 2,063 | 8,280 | (9,250) | 29,701 |
| Foreign currency translation adjustments attributable to noncontrolling int. | (80) | 411 | (215) | 479 |
| Balance at end of period | (48,821) | (56,720) | (48,821) | (56,720) |
| Balance at end of period | (221,041) | 129,682 | (221,041) | 129,682 |
| | | | | |
| Common shares held in treasury, at cost | | | | |
| Balance at beginning of period | (2,266,529) | (2,051,343) | (2,077,741) | (2,034,570) |
| Shares repurchased for treasury | (13,622) | (2,301) | (202,410) | (19,074) |
| Balance at end of period | (2,280,151) | (2,053,644) | (2,280,151) | (2,053,644) |
| | | | | |
| Total shareholders’ equity available to Arch | 9,355,148 | 8,911,144 | 9,355,148 | 8,911,144 |
| Non-redeemable noncontrolling interests | 876,754 | 860,898 | 876,754 | 860,898 |
| Total shareholders’ equity | $10,231,902 | $9,772,042 | $10,231,902 | $9,772,042 |

See Notes to Consolidated Financial Statements

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(U.S. dollars in thousands)

| | (Unaudited) Nine Months Ended September 30, 2018 | 2017 |
|---|---|---|
| Operating Activities | | |
| Net income | $671,497 | $427,917 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | |
| Net realized (gains) losses | 224,757 | (141,944) |
| Net impairment losses recognized in earnings | 1,124 | 5,415 |
| Equity in net income or loss of investment funds accounted for using the equity method and other income or loss | 6,357 | (63,784) |
| Amortization of intangible assets | 79,523 | 93,942 |
| Share-based compensation | 45,806 | 58,308 |
| Changes in: | | |
| Reserve for losses and loss adjustment expenses, net of unpaid losses and loss adjustment expenses recoverable | 68,245 | 602,652 |
| Unearned premiums, net of ceded unearned premiums | 182,453 | 230,581 |
| Premiums receivable | (203,247) | (167,143) |
| Deferred acquisition costs | (36,074) | (73,631) |
| Reinsurance balances payable | 83,696 | 37,528 |
| Other items, net | (3,150) | 50,868 |
| Net cash provided by operating activities | 1,120,987 | 1,060,709 |
| Investing Activities | | |
| Purchases of fixed maturity investments | (24,837,917) | (28,079,129) |
| Purchases of equity securities | (819,342) | (667,135) |
| Purchases of other investments | (1,543,332) | (1,406,528) |
| Proceeds from sales of fixed maturity investments | 23,310,203 | 27,629,474 |
| Proceeds from sales of equity securities | 866,919 | 751,873 |
| Proceeds from sales, redemptions and maturities of other investments | 1,178,035 | 938,581 |
| Proceeds from redemptions and maturities of fixed maturity investments | 724,021 | 747,621 |
| Net settlements of derivative instruments | 765 | (20,952) |
| Net sales (purchases) of short-term investments | 554,315 | (964,653) |
| Change in cash collateral related to securities lending | 137,073 | 148,692 |
| Acquisitions, net of cash | — | (27,709) |
| Purchases of fixed assets | (19,050) | (16,862) |
| Other | 58,227 | 94,089 |
| Net cash provided by (used for) investing activities | (390,083) | (872,638) |
| Financing Activities | | |
| Proceeds from issuance of preferred shares, net | — | 222,054 |
| Redemption of preferred shares | (92,555) | (230,000) |
| Purchases of common shares under share repurchase program | (184,529) | — |
| Proceeds from common shares issued, net | (12,029) | (7,484) |
| Proceeds from borrowings | 167,259 | 238,915 |
| Repayments of borrowings | (427,000) | (172,000) |
| Change in cash collateral related to securities lending | (137,073) | (148,692) |
| Dividends paid to redeemable noncontrolling interests | (13,491) | (13,491) |

| | | |
|---|---|---|
| Other | (6,084 ) | (49,280 ) |
| Preferred dividends paid | (31,242 ) | (34,936 ) |
| Net cash provided by (used for) financing activities | (736,744 ) | (194,914 ) |
| | | |
| Effects of exchange rate changes on foreign currency cash and restricted cash | (11,625 ) | 17,888 |
| | | |
| Increase (decrease) in cash and restricted cash | (17,465 ) | 11,045 |
| Cash and restricted cash, beginning of year | 727,284 | 969,569 |
| Cash and restricted cash, end of period | $709,819 | $980,614 |

See Notes to Consolidated Financial Statements

## 1. Basis of Presentation and Recent Accounting Pronouncements

### Basis of Presentation

Arch Capital Group Ltd. (“Arch Capital”) is a Bermuda public limited liability company which provides insurance, reinsurance and mortgage insurance on a worldwide basis through its wholly-owned subsidiaries. As used herein, the “Company” means Arch Capital and its subsidiaries. The Company’s consolidated financial statements include the results of Watford Holdings Ltd. and its wholly owned subsidiaries. See Note 10.

The interim consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“GAAP”). 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 materially from those estimates and assumptions. In the opinion of management, the accompanying unaudited interim consolidated financial statements reflect all adjustments (consisting of normally recurring accruals) necessary for a fair statement of results on an interim basis. The results of any interim period are not necessarily indicative of the results for a full year or any future periods.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with GAAP have been condensed or omitted; however, management believes that the disclosures are adequate to make the information presented not misleading. This report should be read in conjunction with the Company’s Annual Report on Form 10-K for the year ended December 31, 2017 (“2017 Form 10-K”), including the Company’s audited consolidated financial statements and related notes.

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, comprehensive income, shareholders’ equity or cash flows. Tabular amounts are in U.S. Dollars in thousands, except share amounts, unless otherwise noted.

### Recent Accounting Pronouncements

#### Recently Issued Accounting Standards Adopted

The Company adopted ASU 2016-01, “Financial Instruments - Overall (Subtopic 825-10) - Recognition and Measurement of

Financial Assets and Financial Liabilities,” which enhances the reporting model for financial instruments and provides improved financial information to readers of the financial statements. Among other provisions focused on improving the recognition and measurement of financial instruments, the ASU significantly changes the income statement impact of equity instruments and the recognition of changes in fair value of financial liabilities attributable to an entity's own credit risk when the fair value option is elected. The ASU requires equity instruments that do not result in consolidation and are not accounted for under the equity method to be measured at fair value with any changes in fair value recognized in net income rather than other comprehensive income. Upon adoption of this ASU, the Company recorded a cumulative effect adjustment of $149.8 million in retained earnings and an offsetting decrease in accumulated other comprehensive income. The adoption of this ASU did not have a material impact on the Company's financial position, cash flows, or total comprehensive income, but may increase volatility in the Company's results of operations in future periods.

The Company adopted Financial Accounting Standards Board (“FASB”) Accounting Standard Update (“ASU”) 2014-09, “Revenue from Contracts with Customers (Topic 606),” which creates a new comprehensive revenue recognition standard that serves as a single source of revenue guidance for all companies in all industries. The guidance applies to all companies that either enter into contracts with customers to transfer goods or services or enter into contracts for the transfer of non-financial assets, unless those contracts are within the scope of other standards, such as insurance contracts or financial instruments. The ASU also requires enhanced disclosures about revenue. The Company adopted

the ASU using the modified retrospective method, whereby the cumulative effect of adoption was recognized as an adjustment to retained earnings at the date of initial application. The impact of the adoption of this ASU was not material, mostly because the accounting for insurance contracts is outside of the scope of ASU 2014-09.
The Company adopted ASU 2016-18, “Statement of Cash Flows (Topic 230) - Restricted Cash,” which requires that restricted cash and restricted cash equivalents be included with cash and cash equivalents in the reconciliation of beginning and ending cash on the statements of cash flows. As a result, transfers between cash and cash equivalents and restricted cash and restricted cash equivalents will no longer be presented on the statement of cash flows. The revised presentation required in this ASU is reflected in the Company’s consolidated statements of cash flows for both periods presented. The adoption of this ASU did not have any effect on the Company’s results of operations, financial position or comprehensive income.

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Recently Issued Accounting Standards Not Yet Adopted
In July 2018, the FASB issued ASU 2018-11, “Leases: Targeted Improvements (Topic 842),” which will ease implementation of the lease standard (ASU 2016-02). The guidance provides an alternative transition method by which leases are recognized at the date of adoption. Entities that elect this transition option will still be required to adopt the new leases standard using the modified retrospective transition method required by the standard, but they will recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption rather than in the earliest period presented. The Company will adopt this alternative transition method when adopting the new lease standard as of January 1, 2019. The Company is currently evaluating the impact of the new guidance on the consolidated financial statements.
In August 2018, the FASB issued ASU 2018-15, “Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40),” to align the requirements for capitalizing certain implementation costs incurred in a cloud computing arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The standard is effective for financial statements issued for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019, with early adoption permitted. The guidance provides flexibility in adoption, allowing for either retrospective adjustment or prospective adjustment for all implementation costs incurred after the date of adoption. The Company is currently evaluating the impact of the new guidance on the consolidated financial statements.
For information regarding additional accounting standards that the Company has not yet adopted, see note 3(q), “Significant Accounting Policies—Recent Accounting Pronouncements,” of the notes to consolidated financial statements in the Company’s 2017 Form 10-K.

2. Share Transactions

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Three-For-One Common Share Split
In May 2018, shareholders approved a proposal to amend the memorandum of association by sub-dividing the authorized common shares of Arch Capital to effect a three-for-one split of Arch Capital’s common shares. The share split changed the Company’s authorized common shares to 1.8 billion common shares (600 million previously), with a par value of $.0011 per share ($.0033 previously). Information pertaining to the composition of the Company’s shareholders’ equity accounts, shares and earnings per share has been retroactively restated in the accompanying financial statements and notes to the consolidated financial statements to reflect the share split.

Share Repurchases
The board of directors of Arch Capital has authorized the investment in Arch Capital’s common shares through a share repurchase program. Since the inception of the share repurchase program, Arch Capital has repurchased 382.6 million common shares for an aggregate purchase price of $3.87 billion. For the nine months ended September 30, 2018, Arch Capital repurchased 6.9 million shares under the share repurchase program with an aggregate purchase price of $184.5 million. Arch Capital did not repurchase any shares under the share repurchase program during the nine months ended September 30, 2017. At September 30, 2018, $262.0 million of share repurchases were available under the program, which 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.
Conversion of Convertible Non-Voting Common Equivalent Preferred Shares
In March 2018, Arch Capital completed an underwritten public secondary offering of 17.0 million common shares (split adjusted) by American International Group, Inc. (“AIG”) following transfer of 0.6 million Series D convertible non-voting common equivalent preferred shares (“Series D Preferred Shares”). Proceeds from the sale of common shares pursuant to the public offering were received by AIG. At September 30, 2018, no Series D Preferred Shares were outstanding.
Series C Preferred Shares

On January 2, 2018, Arch Capital redeemed all outstanding 6.75% Series C non-cumulative preferred shares. The preferred shares were redeemed at a redemption price equal to $25 per share, plus all declared and unpaid dividends to (but excluding) the redemption date. In accordance with GAAP, following the redemption, original issuance costs related to such shares have been removed from additional paid-in capital and recorded as a “loss on redemption of preferred shares.” Such adjustment had no impact on total shareholders’ equity or cash flows.

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3. Earnings (Loss) Per Common Share

Due to the net loss recorded in the 2017 third quarter, diluted weighted average common shares and common share equivalents outstanding for the 2017 third quarter do not include the effect of 4.7 million otherwise dilutive securities since the inclusion of such securities is anti-dilutive to per share results. Since the Company reported net income for the other periods presented, the computation of diluted average shares outstanding includes dilutive securities for such periods.
The following table sets forth the computation of basic and diluted earnings per common share:

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Numerator: | | | | |
| Net income (loss) | $248,766 | $(45,217) | $671,497 | $427,917 |
| Amounts attributable to noncontrolling interests | (21,358) | 11,561 | (50,020) | (23,279) |
| Net income (loss) available to Arch | 227,408 | (33,656) | 621,477 | 404,638 |
| Preferred dividends | (10,402) | (12,369) | (31,242) | (34,936) |
| Loss on redemption of preferred shares | — | (6,735) | (2,710) | (6,735) |
| Net income (loss) available to Arch common shareholders | $217,006 | $(52,760) | $587,525 | $362,967 |
| | | | | |
| Denominator: | | | | |
| Weighted average common shares outstanding | 402,939,092 | 387,633,753 | 400,649,105 | 373,579,833 |
| Series D preferred shares (1) | — | 17,022,600 | 4,427,123 | 29,836,554 |
| Weighted average common shares and common share equivalents outstanding — basic | 402,939,092 | 404,656,353 | 405,076,228 | 403,416,387 |
| Effect of dilutive common share equivalents: | | | | |
| Nonvested restricted shares | 1,619,286 | — | 1,568,044 | 4,379,637 |
| Stock options (2) | 7,162,836 | — | 7,348,920 | 9,870,948 |
| Weighted average common shares and common share equivalents outstanding — diluted | 411,721,214 | 404,656,353 | 413,993,192 | 417,666,972 |
| | | | | |
| Earnings (loss) per common share: | | | | |
| Basic | $0.54 | $(0.13) | $1.45 | $0.90 |
| Diluted | $0.53 | $(0.13) | $1.42 | $0.87 |

(1) Such shares are convertible non-voting common equivalent preferred shares issued in connection with the UGC acquisition. See Note 2.

(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 the 2018 third quarter and 2017 third quarter, the number of stock options excluded were 4,396,352 and 0, respectively. For the nine months ended September 30, 2018 and 2017, the number of stock options excluded were 5,481,584 and 2,516,604, respectively.

## 4. 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 President and Chief Executive Officer of Arch Capital, and the Chief Financial Officer of Arch Capital. 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; excess and surplus casualty; lenders products; professional lines; programs; property, energy, marine and aviation; travel, accident and health; and other (consisting of alternative markets, excess workers' compensation and surety business).

The reinsurance segment consists of the Company’s reinsurance underwriting units which offer specialty product lines on a worldwide basis. Product lines include: casualty; marine and aviation; other specialty; property catastrophe; property excluding property catastrophe (losses on a single risk, both excess of loss and pro rata); and other (consisting of life reinsurance, casualty clash and other).

The mortgage segment includes the Company’s U.S. and international mortgage insurance and reinsurance operations as well as government sponsored enterprise (“GSE”) credit-risk sharing transactions. Arch Mortgage Insurance Company and United Guaranty Residential Insurance Company (combined “Arch MI U.S.”) are approved as eligible mortgage insurers by Federal National Mortgage Association (“Fannie Mae”) and Federal Home Loan Mortgage Corporation (“Freddie Mac”), each a GSE.

The corporate (non-underwriting) segment results include net investment income, other income (loss), corporate expenses, transaction costs and other, interest expense, items related to the Company’s non-cumulative preferred shares, 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 income taxes. Such amounts exclude the results of the ‘other’ segment.

The ‘other’ segment includes the results of Watford Re (see Note 10). 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:

| | Three Months Ended September 30, 2018 | | | | | |
|---|---|---|---|---|---|---|
| | Insurance | Reinsurance | Mortgage | Sub-Total | Other | Total |
| Gross premiums written (1) | $836,820 | $435,396 | $350,559 | $1,622,532 | $185,033 | $1,731,328 |
| Premiums ceded | (259,968 ) | (123,705 ) | (57,226 ) | (440,656 ) | (33,356 ) | (397,775 ) |
| Net premiums written | 576,852 | 311,691 | 293,333 | 1,181,876 | 151,677 | 1,333,553 |
| Change in unearned premiums | (15,794 ) | (18,418 ) | 7,591 | (26,621 ) | (16,054 ) | (42,675 ) |
| Net premiums earned | 561,058 | 293,273 | 300,924 | 1,155,255 | 135,623 | 1,290,878 |
| Other underwriting income (loss) | — | 1,387 | 3,733 | 5,120 | 703 | 5,823 |
| Losses and loss adjustment expenses | (409,435 ) | (183,413 ) | (9,615 ) | (602,463 ) | (96,957 ) | (699,420 ) |
| Acquisition expenses | (88,255 ) | (50,367 ) | (33,361 ) | (171,983 ) | (29,619 ) | (201,602 ) |
| Other operating expenses | (90,081 ) | (29,936 ) | (31,122 ) | (151,139 ) | (9,959 ) | (161,098 ) |
| Underwriting income (loss) | $(26,713 ) | $30,944 | $230,559 | 234,790 | (209 ) | 234,581 |
| | | | | | | |
| Net investment income | | | | 114,328 | 29,696 | 144,024 |
| Net realized gains (losses) | | | | (47,010 ) | (4,695 ) | (51,705 ) |
| Net impairment losses recognized in earnings | | | | (492 ) | — | (492 ) |
| Equity in net income (loss) of investment funds accounted for using the equity method | | | | 15,982 | — | 15,982 |
| Other income (loss) | | | | (726 ) | — | (726 ) |
| Corporate expenses (2) | | | | (13,244 ) | — | (13,244 ) |
| Transaction costs and other (2) | | | | (1,091 ) | — | (1,091 ) |
| Amortization of intangible assets | | | | (26,315 ) | — | (26,315 ) |
| Interest expense | | | | (24,666 ) | (5,064 ) | (29,730 ) |
| Net foreign exchange gains (losses) | | | | 7,130 | 3,708 | 10,838 |
| Income before income taxes | | | | 258,686 | 23,436 | 282,122 |
| Income tax expense | | | | (33,356 ) | — | (33,356 ) |
| Net income | | | | 225,330 | 23,436 | 248,766 |
| Dividends attributable to redeemable noncontrolling interests | | | | — | (4,599 ) | (4,599 ) |
| Amounts attributable to nonredeemable noncontrolling interests | | | | — | (16,759 ) | (16,759 ) |
| Net income available to Arch | | | | 225,330 | 2,078 | 227,408 |
| Preferred dividends | | | | (10,402 ) | — | (10,402 ) |
| Net income available to Arch common shareholders | | | | $214,928 | $2,078 | $217,006 |
| | | | | | | |
| Underwriting Ratios | | | | | | |
| Loss ratio | 73.0 % | 62.5 % | 3.2 % | 52.1 % | 71.5 % | 54.2 % |
| Acquisition expense ratio | 15.7 % | 17.2 % | 11.1 % | 14.9 % | 21.8 % | 15.6 % |
| Other operating expense ratio | 16.1 % | 10.2 % | 10.3 % | 13.1 % | 7.3 % | 12.5 % |

| | | | | | | |
|---|---|---|---|---|---|---|
| Combined ratio | 104.8 % | 89.9 % | 24.6 % | 80.1 % | 100.6 % | 82.3 % |
| Goodwill and intangible assets | $20,141 | $— | $538,871 | $559,012 | $7,650 | $566,662 |

(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 reflected in 'transaction costs and other.'

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| | Three Months Ended September 30, 2017 | | | | | |
|---|---|---|---|---|---|---|
| | Insurance | Reinsurance | Mortgage | Sub-Total | Other | Total |
| Gross premiums written (1) | $787,447 | $422,083 | $347,951 | $1,557,179 | $166,198 | $1,648,246 |
| Premiums ceded | (222,516) | (105,389) | (57,900) | (385,503) | (12,471) | (322,843) |
| Net premiums written | 564,931 | 316,694 | 290,051 | 1,171,676 | 153,727 | 1,325,403 |
| Change in unearned premiums | (29,766) | 6,879 | (15,533) | (38,420) | (25,097) | (63,517) |
| Net premiums earned | 535,165 | 323,573 | 274,518 | 1,133,256 | 128,630 | 1,261,886 |
| Other underwriting income (loss) | — | 1,728 | 3,599 | 5,327 | 737 | 6,064 |
| Losses and loss adjustment expenses | (568,795) | (318,609) | (35,156) | (922,560) | (123,581) | (1,046,141) |
| Acquisition expenses | (82,638) | (57,340) | (21,803) | (161,781) | (32,073) | (193,854) |
| Other operating expenses | (90,875) | (36,214) | (34,770) | (161,859) | (8,268) | (170,127) |
| Underwriting income (loss) | $(207,143) | $(86,862) | $186,388 | (107,617) | (34,555) | (142,172) |
| | | | | | | |
| Net investment income | | | | 94,127 | 22,332 | 116,459 |
| Net realized gains (losses) | | | | 64,104 | 2,171 | 66,275 |
| Net impairment losses recognized in earnings | | | | (1,878) | — | (1,878) |
| Equity in net income (loss) of investment funds accounted for using the equity method | | | | 31,090 | — | 31,090 |
| Other income (loss) | | | | (342) | — | (342) |
| Corporate expenses (2) | | | | (14,108) | — | (14,108) |
| Transaction costs and other (2) | | | | (2,990) | — | (2,990) |
| Amortization of intangible assets | | | | (31,824) | — | (31,824) |
| Interest expense | | | | (26,264) | (3,246) | (29,510) |
| Net foreign exchange gains (losses) | | | | (27,785) | (243) | (28,028) |
| Income (loss) before income taxes | | | | (23,487) | (13,541) | (37,028) |
| Income tax expense | | | | (8,168) | (21) | (8,189) |
| Net income (loss) | | | | (31,655) | (13,562) | (45,217) |
| Dividends attributable to redeemable noncontrolling interests | | | | — | (4,586) | (4,586) |
| Amounts attributable to nonredeemable noncontrolling interests | | | | — | 16,147 | 16,147 |
| Net income (loss) available to Arch | | | | (31,655) | (2,001) | (33,656) |
| Preferred dividends | | | | (12,369) | — | (12,369) |
| Loss on redemption of preferred shares | | | | (6,735) | — | (6,735) |
| Net income (loss) available to Arch common shareholders | | | | $(50,759) | $(2,001) | $(52,760) |
| | | | | | | |
| Underwriting Ratios | | | | | | |
| Loss ratio | 106.3% | 98.5% | 12.8% | 81.4% | 96.1% | 82.9% |
| Acquisition expense ratio | 15.4% | 17.7% | 7.9% | 14.3% | 24.9% | 15.4% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Other operating expense ratio | 17.0 % | 11.2 % | 12.7 % | 14.3 % | 6.4 % | 13.5 % |
| Combined ratio | 138.7 % | 127.4 % | 33.4 % | 110.0 % | 127.4 % | 111.8 % |
| | | | | | | |
| Goodwill and intangible assets | $23,445 | $417 | $652,893 | $676,755 | $7,650 | $684,405 |

(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 reflected in ‘transaction costs and other.’

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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| Nine Months Ended September 30, 2018 | Insurance | Reinsurance | Mortgage | Sub-Total | Other | Total |
|---|---|---|---|---|---|---|
| Gross premiums written (1) | $2,429,570 | $1,503,206 | $1,002,727 | $4,935,339 | $574,078 | $5,266,086 |
| Premiums ceded | (752,413) | (455,682) | (154,230) | (1,362,161) | (102,263) | (1,221,093) |
| Net premiums written | 1,677,157 | 1,047,524 | 848,497 | 3,573,178 | 471,815 | 4,044,993 |
| Change in unearned premiums | (30,913) | (134,761) | 23,147 | (142,527) | (39,926) | (182,453) |
| Net premiums earned | 1,646,244 | 912,763 | 871,644 | 3,430,651 | 431,889 | 3,862,540 |
| Other underwriting income (loss) | — | 2,490 | 10,464 | 12,954 | 2,092 | 15,046 |
| Losses and loss adjustment expenses | (1,120,630) | (555,044) | (74,672) | (1,750,346) | (312,087) | (2,062,433) |
| Acquisition expenses | (264,094) | (148,828) | (87,665) | (500,587) | (95,229) | (595,816) |
| Other operating expenses | (274,735) | (101,185) | (108,622) | (484,542) | (27,752) | (512,294) |
| Underwriting income (loss) | $(13,215) | $110,196 | $611,149 | 708,130 | (1,087) | 707,043 |
| | | | | | | |
| Net investment income | | | | 322,332 | 84,084 | 406,416 |
| Net realized gains (losses) | | | | (218,414) | (20,900) | (239,314) |
| Net impairment losses recognized in earnings | | | | (1,124) | — | (1,124) |
| Equity in net income (loss) of investment funds accounted for using the equity method | | | | 52,523 | — | 52,523 |
| Other income (loss) | | | | 2,461 | — | 2,461 |
| Corporate expenses (2) | | | | (43,330) | — | (43,330) |
| Transaction costs and other (2) | | | | (8,829) | — | (8,829) |
| Amortization of intangible assets | | | | (79,523) | — | (79,523) |
| Interest expense | | | | (76,631) | (14,079) | (90,710) |
| Net foreign exchange gains (losses) | | | | 38,302 | 6,521 | 44,823 |
| Income before income taxes | | | | 695,897 | 54,539 | 750,436 |
| Income tax expense | | | | (78,912) | (27) | (78,939) |
| Net income | | | | 616,985 | 54,512 | 671,497 |
| Dividends attributable to redeemable noncontrolling interests | | | | — | (13,769) | (13,769) |
| Amounts attributable to nonredeemable noncontrolling interests | | | | — | (36,251) | (36,251) |
| Net income available to Arch | | | | 616,985 | 4,492 | 621,477 |
| Preferred dividends | | | | (31,242) | — | (31,242) |
| Loss on redemption of preferred shares | | | | (2,710) | — | (2,710) |
| Net income available to Arch common shareholders | | | | $583,033 | $4,492 | $587,525 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Underwriting Ratios | | | | | | |
| Loss ratio | 68.1 % | 60.8 % | 8.6 % | 51.0 % | 72.3 % | 53.4 % |
| Acquisition expense ratio | 16.0 % | 16.3 % | 10.1 % | 14.6 % | 22.0 % | 15.4 % |
| Other operating expense ratio | 16.7 % | 11.1 % | 12.5 % | 14.1 % | 6.4 % | 13.3 % |
| Combined ratio | 100.8 % | 88.2 % | 31.2 % | 79.7 % | 100.7 % | 82.1 % |

(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 reflected in ‘transaction costs and other.’

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| | Nine Months Ended September 30, 2017 | | | | | |
|---|---|---|---|---|---|---|
| | Insurance | Reinsurance | Mortgage | Sub-Total | Other | Total |
| Gross premiums written (1) | $2,313,630 | $1,351,051 | $1,032,800 | $4,697,007 | $473,131 | $4,915,895 |
| Premiums ceded | (704,057) | (386,743) | (194,139) | (1,284,465) | (35,315) | (1,065,537) |
| Net premiums written | 1,609,573 | 964,308 | 838,661 | 3,412,542 | 437,816 | 3,850,358 |
| Change in unearned premiums | (51,188) | (81,182) | (61,776) | (194,146) | (36,435) | (230,581) |
| Net premiums earned | 1,558,385 | 883,126 | 776,885 | 3,218,396 | 401,381 | 3,619,777 |
| Other underwriting income (loss) | — | 1,143 | 11,999 | 13,142 | 2,377 | 15,519 |
| Losses and loss adjustment expenses | (1,252,375) | (631,669) | (84,915) | (1,968,959) | (319,612) | (2,288,571) |
| Acquisition expenses | (236,378) | (154,638) | (76,235) | (467,251) | (99,328) | (566,579) |
| Other operating expenses | (271,268) | (110,458) | (108,790) | (490,516) | (24,311) | (514,827) |
| Underwriting income (loss) | $(201,636) | $(12,496) | $518,944 | 304,812 | (39,493) | 265,319 |
| Net investment income | | | | 282,459 | 62,998 | 345,457 |
| Net realized gains (losses) | | | | 110,662 | 11,501 | 122,163 |
| Net impairment losses recognized in earnings | | | | (5,415) | — | (5,415) |
| Equity in net income (loss) of investment funds accounted for using the equity method | | | | 111,884 | — | 111,884 |
| Other income (loss) | | | | (3,118) | — | (3,118) |
| Corporate expenses (2) | | | | (48,517) | — | (48,517) |
| Transaction costs and other (2) | | | | (21,249) | — | (21,249) |
| Amortization of intangible assets | | | | (93,942) | — | (93,942) |
| Interest expense | | | | (77,932) | (9,003) | (86,935) |
| Net foreign exchange gains (losses) | | | | (85,451) | (1,524) | (86,975) |
| Income before income taxes | | | | 474,193 | 24,479 | 498,672 |
| Income tax expense | | | | (70,734) | (21) | (70,755) |
| Net income | | | | 403,459 | 24,458 | 427,917 |
| Dividends attributable to redeemable noncontrolling interests | | | | — | (13,756) | (13,756) |
| Amounts attributable to nonredeemable noncontrolling interests | | | | — | (9,523) | (9,523) |
| Net income available to Arch | | | | 403,459 | 1,179 | 404,638 |
| Preferred dividends | | | | (34,936) | — | (34,936) |
| Loss on redemption of preferred shares | | | | (6,735) | — | (6,735) |
| Net income available to Arch common shareholders | | | | $361,788 | $1,179 | $362,967 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Underwriting Ratios | | | | | | | | | | | | |
| Loss ratio | 80.4 | % | 71.5 | % | 10.9 | % | 61.2 | % | 79.6 | % | 63.2 | % |
| Acquisition expense ratio | 15.2 | % | 17.5 | % | 9.8 | % | 14.5 | % | 24.7 | % | 15.7 | % |
| Other operating expense ratio | 17.4 | % | 12.5 | % | 14.0 | % | 15.2 | % | 6.1 | % | 14.2 | % |
| Combined ratio | 113.0 | % | 101.5 | % | 34.7 | % | 90.9 | % | 110.4 | % | 93.1 | % |

(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 reflected in ‘transaction costs and other.’

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5. 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:

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Reserve for losses and loss adjustment expenses at beginning of period | $11,424,337 | $10,520,511 | $11,383,792 | $10,200,960 |
| Unpaid losses and loss adjustment expenses recoverable | 2,651,749 | 2,116,210 | 2,464,910 | 2,083,575 |
| Net reserve for losses and loss adjustment expenses at beginning of period | 8,772,588 | 8,404,301 | 8,918,882 | 8,117,385 |
| | | | | |
| Net incurred losses and loss adjustment expenses relating to losses occurring in: | | | | |
| Current year | 779,043 | 1,091,373 | 2,257,670 | 2,486,410 |
| Prior years | (79,623) | (45,232) | (195,237) | (197,839) |
| Total net incurred losses and loss adjustment expenses | 699,420 | 1,046,141 | 2,062,433 | 2,288,571 |
| | | | | |
| Retroactive reinsurance transaction (1) | — | — | (420,404) | — |
| | | | | |
| Net foreign exchange (gains) losses | (33,783) | 61,919 | (110,061) | 168,493 |
| | | | | |
| Net paid losses and loss adjustment expenses relating to losses occurring in: | | | | |
| Current year | (149,999) | (167,450) | (245,021) | (282,952) |
| Prior years | (396,695) | (457,183) | (1,314,298) | (1,403,769) |
| Total net paid losses and loss adjustment expenses | (546,694) | (624,633) | (1,559,319) | (1,686,721) |
| | | | | |
| Net reserve for losses and loss adjustment expenses at end of period | 8,891,531 | 8,887,728 | 8,891,531 | 8,887,728 |
| Unpaid losses and loss adjustment expenses recoverable | 2,662,790 | 2,463,539 | 2,662,790 | 2,463,539 |
| Reserve for losses and loss adjustment expenses at end of period | $11,554,321 | $11,351,267 | $11,554,321 | $11,351,267 |

(1) During the 2018 second quarter, a subsidiary of the Company entered into a retroactive reinsurance transaction with a third party reinsurer to reinsure run-off liabilities associated with certain discontinued U.S. specialty casualty and program exposures.

Development on Prior Year Loss Reserves

2018 Third Quarter

During the 2018 third quarter, the Company recorded net favorable development on prior year loss reserves of $79.6 million, which consisted of $34.3 million from the reinsurance segment, $5.9 million from the insurance segment, $38.6 million from the mortgage segment and $0.7 million from the ‘other’ segment.
The reinsurance segment’s net favorable development of $34.3 million, or 11.7 loss ratio points, for the 2018 third quarter consisted of $26.5 million from short-tailed lines and $7.8 million from long-tailed and medium-tailed lines.

Favorable development in short-tailed lines included $15.9 million from property catastrophe and property other than property catastrophe reserves, across most underwriting years (i.e., all premiums and losses attributable to contracts having an inception or renewal date within the given twelve-month period), reflecting lower levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during the period, and $10.3 million from other specialty reserves, primarily from the 2016

underwriting year. Favorable development in long-tailed and medium-tailed lines reflected reductions in casualty reserves of $7.9 million based on varying levels of reported and paid claims activity, primarily from the 2009 underwriting year.

The insurance segment's net favorable development of $5.9 million, or 1.1 loss ratio points, for the 2018 third quarter consisted of $14.3 million of net favorable development in short-tailed lines and $8.4 million of net adverse development in medium-tailed and long-tailed lines. Net favorable development in short-tailed lines primarily resulted from property (including special risk other than marine) reserves from the 2017 accident year (i.e., the year in which a loss occurred) while net adverse development in medium-tailed and long-tailed lines primarily resulted from $16.4 million of adverse development on contract binding business, primarily from the 2015 to 2017 accident years. Such amounts were partially offset by $8.0 million of net favorable development in other medium-tailed and short-tailed lines, including professional liability and surety business, across most accident years.

The mortgage segment's net favorable development was $38.6 million, or 12.8 loss ratio points, for the 2018 third quarter. The 2018 third quarter development was primarily driven by continued lower than expected claim rates on first lien business and subrogation recoveries on second lien business at Arch MI U.S.

2017 Third Quarter

During the 2017 third quarter, the Company recorded net favorable development on prior year loss reserves of $45.2 million, which consisted of $36.5 million from the reinsurance segment, $3.0 million from the insurance segment, $21.5 million from the mortgage segment and adverse development of $15.8 million from the 'other' segment.

The reinsurance segment's net favorable development of $36.5 million, or 11.3 loss ratio points, for the 2017 third quarter consisted of $16.9 million from short-tailed lines and $19.6 million from long-tailed and medium-tailed lines. Favorable development in short-tailed lines included $11.8 million from property catastrophe and property other than property catastrophe reserves, across most underwriting years, reflecting lower levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during the period. Favorable development in long-tailed and medium-tailed lines reflected reductions in casualty reserves of $13.4 million based on varying levels of reported and paid claims activity, primarily from the 2002 to 2009 underwriting years, and favorable development in marine reserves of $4.3 million across most underwriting years.

The insurance segment's net favorable development of $3.0 million, or 0.6 loss ratio points, for the 2017 third quarter consisted of $1.8 million of net favorable development in short-tailed lines and $1.2 million of net favorable development in medium-tailed and long-tailed lines. Net favorable development in short-tailed lines primarily resulted from property (including special risk other than marine) reserves from the 2011 to 2016 accident years. Net favorable development in medium-tailed lines reflected $11.9 million from professional liability reserves across most accident years and in surety reserves with $4.2 million of favorable development. Such amounts were partially offset by $12.9 million of adverse development on a small number of programs in the 2014 to 2016 accident years.

The mortgage segment's net favorable development was $21.5 million, or 7.8 loss ratio points, for the 2017 third quarter. The 2017 third quarter development was primarily driven by continued lower than expected claim rates on first lien business and subrogation recoveries on second lien business at Arch MI U.S.

Nine Months Ended September 30, 2018

During the nine months ended September 30, 2018, the Company recorded net favorable development on prior year loss reserves of $195.2 million, which consisted of $103.9 million from the reinsurance segment, $14.1 million from the insurance segment, $74.9 million from the mortgage segment and $2.3 million from the 'other' segment.

The reinsurance segment's net favorable development of $103.9 million, or 11.4 loss ratio points, for the 2018 period consisted of $77.6 million from short-tailed lines and $26.3 million from long-tailed and medium-tailed lines. Favorable development in short-tailed lines included $56.4 million from property catastrophe and property other than property catastrophe reserves, across most underwriting years, reflecting lower levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during the period, and $10.7 million from other specialty reserves, across most underwriting years. Favorable development in long-tailed and medium-tailed lines reflected reductions in casualty reserves of $16.0 million based on varying levels of reported and paid claims activity, primarily from the 2002 to 2010 underwriting years, and favorable development in marine reserves of $10.8 million across most underwriting years.

The insurance segment's net favorable development of $14.1 million, or 0.9 loss ratio points, for the 2018 period consisted of $37.0 million of net favorable development in short-tailed lines and $16.4 million of net favorable development in long-tailed lines, partially offset by $39.3 million of net adverse development in medium-tailed lines. Net favorable development in short-tailed lines primarily resulted from property (including special risk other than marine) reserves from the 2010 and 2017 accident years. Net favorable development in long-tailed lines reflected net reductions in executive assurance reserves of $8.0 million, primarily from the 2008 accident year, and in healthcare reserves of $8.1 million, primarily from the 2003 accident year. Net adverse development in medium-tailed lines reflected $23.4 million of adverse development in program business, primarily driven by a few inactive programs that were non-renewed in prior periods and $42.1 million of adverse development on contract binding business, primarily from the 2014 to 2017 accident years. Such amounts were partially offset by $26.2 million of net favorable development in other medium-tailed lines, including professional liability and surety business, across most accident years.

The mortgage segment's net favorable development was $74.9 million, or 8.6 loss ratio points, for the 2018 period. The 2018 development was primarily driven by continued lower than expected claim rates on first lien business and subrogation recoveries on second lien business at Arch MI U.S.

Nine Months Ended September 30, 2017

During the nine months ended September 30, 2017, the Company recorded net favorable development on prior year loss reserves of $197.8 million, which consisted of $133.3 million from the reinsurance segment, $7.2 million from the insurance segment, $74.9 million from the mortgage segment and adverse development of $17.5 million from the 'other' segment.

The reinsurance segment's net favorable development of $133.3 million, or 15.1 points, for the 2017 period consisted of $85.8 million from short-tailed lines and $47.5 million from long-tailed and medium-tailed lines. Favorable development in short-tailed lines included $62.7 million from property catastrophe and property other than property catastrophe reserves, across most underwriting years, reflecting lower levels of reported and paid claims activity than previously anticipated which led to decreases in certain loss ratio selections during the period, and $20.3 million from other specialty reserves, primarily from the 2016 underwriting year. Favorable development in long-tailed and medium-tailed lines reflected reductions in casualty reserves of $28.0 million based on varying levels of reported and paid claims activity, primarily from the 2002 to 2013 underwriting years, and favorable development in marine reserves of $16.6 million across most underwriting years.

The insurance segment's net favorable development of $7.2 million, or 0.5 points, for the 2017 period consisted of $9.0 million of net favorable development in short-tailed lines and $7.4 million of net favorable development in long-tailed lines, partially offset by $9.2 million of net adverse development in medium-tailed lines. Net favorable development in short-tailed lines primarily resulted from property (including special risk other than marine) reserves from the 2011 to 2016 accident years. Net favorable development in long-tailed lines reflected net reductions in executive assurance reserves from the 2008 to 2014 accident years and reductions in healthcare reserves across various accident years, partially offset by $17.2 million of adverse development on construction reserves across various accident years. Net adverse development in medium-tailed lines primarily resulted from an increase in programs of $39.3 million stemming in part from development on a small number of programs in the 2013 to 2015 accident years, partially offset by net favorable development of $30.1 million in other medium-tailed lines, primarily in professional liability and surety.

The mortgage segment's net favorable development was $74.9 million, or 9.6 points, for the 2017 period. The 2017 development was primarily driven by continued lower than expected claim rates on first lien business and subrogation recoveries on second lien business at Arch MI U.S.

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6. Investment Information

At September 30, 2018, total investable assets of $22.32 billion included $19.59 billion held by the Company and $2.73 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) |
|---|---|---|---|---|---|
| September 30, 2018 | | | | | |
| Fixed maturities (1): | | | | | |
| Corporate bonds | $5,639,800 | $7,363 | $(95,474) | $5,727,911 | $(69) |
| Mortgage backed securities | 468,254 | 1,412 | (7,772) | 474,614 | (6) |
| Municipal bonds | 1,222,440 | 4,236 | (26,460) | 1,244,664 | — |
| Commercial mortgage backed securities | 682,516 | 578 | (15,062) | 697,000 | — |
| U.S. government and government agencies | 3,276,243 | 1,499 | (29,013) | 3,303,757 | — |
| Non-U.S. government securities | 1,722,606 | 13,917 | (40,094) | 1,748,783 | — |
| Asset backed securities | 1,606,473 | 2,749 | (13,450) | 1,617,174 | — |
| Total | 14,618,332 | 31,754 | (227,325) | 14,813,903 | (75) |
| Equity securities (3) | | | | | |
| Other investments | — | — | — | — | — |
| Short-term investments | 961,799 | 195 | (389) | 961,993 | — |
| Total | $15,580,131 | $31,949 | $(227,714) | $15,775,896 | $(75) |
| | | | | | |
| December 31, 2017 | | | | | |
| Fixed maturities (1): | | | | | |
| Corporate bonds | $4,434,439 | $30,943 | $(32,340) | $4,435,836 | $(73) |
| Mortgage backed securities | 316,141 | 1,640 | (2,561) | 317,062 | (15) |
| Municipal bonds | 2,158,840 | 20,285 | (12,308) | 2,150,863 | — |
| Commercial mortgage backed securities | 545,817 | 2,131 | (4,268) | 547,954 | — |
| U.S. government and government agencies | 3,484,257 | 2,188 | (28,769) | 3,510,838 | — |
| Non-U.S. government securities | 1,612,754 | 48,764 | (17,321) | 1,581,311 | — |
| Asset backed securities | 1,780,143 | 5,147 | (8,614) | 1,783,610 | — |
| Total | 14,332,391 | 111,098 | (106,181) | 14,327,474 | (88) |
| Equity securities | 504,333 | 88,739 | (5,583) | 421,177 | — |
| Other investments | 264,989 | 66,946 | (120) | 198,163 | — |
| Short-term investments | 1,469,042 | 650 | (563) | 1,468,955 | — |
| Total | $16,570,755 | $267,433 | $(112,447) | $16,415,769 | $(88) |

(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 September 30, 2018, the net unrealized gain related to securities for which a non-credit OTTI was recognized in

AOCI was $0.2 million, compared to a net unrealized gain of $0.3 million at December 31, 2017.

(3) Effective January 1, 2018, the Company adopted new accounting guidance for financial instruments (see Note 1). As a result, equity securities are no longer accounted for as available for sale and are excluded from this table.

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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 |
| September 30, 2018 | | | | | | |
| Fixed maturities (1): | | | | | | |
| Corporate bonds | $4,517,581 | $(75,830) | $483,379 | $(19,644) | $5,000,960 | $(95,474) |
| Mortgage backed securities | 402,443 | (6,721) | 26,414 | (1,051) | 428,857 | (7,772) |
| Municipal bonds | 744,018 | (16,808) | 198,243 | (9,652) | 942,261 | (26,460) |
| Commercial mortgage backed securities | 499,307 | (8,745) | 103,813 | (6,317) | 603,120 | (15,062) |
| U.S. government and government agencies | 2,818,235 | (22,512) | 214,570 | (6,501) | 3,032,805 | (29,013) |
| Non-U.S. government securities | 1,289,557 | (29,224) | 299,654 | (10,870) | 1,589,211 | (40,094) |
| Asset backed securities | 1,176,057 | (11,096) | 139,349 | (2,354) | 1,315,406 | (13,450) |
| Total | 11,447,198 | (170,936) | 1,465,422 | (56,389) | 12,912,620 | (227,325) |
| Equity securities (2) | | | | | | |
| Other investments | — | — | — | — | — | — |
| Short-term investments | 189,378 | (389) | — | — | 189,378 | (389) |
| Total | $11,636,576 | $(171,325) | $1,465,422 | $(56,389) | $13,101,998 | $(227,714) |
| | | | | | | |
| December 31, 2017 | | | | | | |
| Fixed maturities (1): | | | | | | |
| Corporate bonds | $2,320,716 | $(25,411) | $279,082 | $(6,929) | $2,599,798 | $(32,340) |
| Mortgage backed securities | 221,113 | (1,715) | 28,380 | (846) | 249,493 | (2,561) |
| Municipal bonds | 1,030,389 | (8,438) | 132,469 | (3,870) | 1,162,858 | (12,308) |
| Commercial mortgage backed securities | 225,164 | (1,899) | 57,291 | (2,369) | 282,455 | (4,268) |
| U.S. government and government agencies | 2,646,415 | (26,501) | 111,879 | (2,268) | 2,758,294 | (28,769) |
| Non-U.S. government securities | 1,218,514 | (15,546) | 93,530 | (1,775) | 1,312,044 | (17,321) |
| Asset backed securities | 1,111,246 | (5,915) | 209,207 | (2,699) | 1,320,453 | (8,614) |
| Total | 8,773,557 | (85,425) | 911,838 | (20,756) | 9,685,395 | (106,181) |
| Equity securities | 166,562 | (5,583) | — | — | 166,562 | (5,583) |
| Other investments | 15,025 | (120) | — | — | 15,025 | (120) |
| Short-term investments | 109,528 | (563) | — | — | 109,528 | (563) |
| Total | $9,064,672 | $(91,691) | $911,838 | $(20,756) | $9,976,510 | $(112,447) |

(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) Effective January 1, 2018, the Company adopted new accounting guidance for financial instruments (see Note 1). As a result, equity securities are no longer accounted for as available for sale and are excluded from this table.

At September 30, 2018, on a lot level basis, approximately 5,610 security lots out of a total of approximately 7,690 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 $2.4 million. At December 31, 2017, on a lot level basis, approximately 3,830 security lots out of a total of approximately 7,450 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 $1.3 million.

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The contractual maturities of the Company's fixed maturities 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 | September 30, 2018 Estimated Fair Value | September 30, 2018 Amortized Cost | December 31, 2017 Estimated Fair Value | December 31, 2017 Amortized Cost |
|---|---|---|---|---|
| Due in one year or less | $330,506 | $331,010 | $550,711 | $548,771 |
| Due after one year through five years | 8,334,661 | 8,431,730 | 7,436,153 | 7,434,801 |
| Due after five years through 10 years | 2,910,493 | 2,972,893 | 3,369,635 | 3,369,750 |
| Due after 10 years | 285,429 | 289,482 | 333,791 | 325,526 |
| | 11,861,089 | 12,025,115 | 11,690,290 | 11,678,848 |
| Mortgage backed securities | 468,254 | 474,614 | 316,141 | 317,062 |
| Commercial mortgage backed securities | 682,516 | 697,000 | 545,817 | 547,954 |
| Asset backed securities | 1,606,473 | 1,617,174 | 1,780,143 | 1,783,610 |
| Total (1) | $14,618,332 | $14,813,903 | $14,332,391 | $14,327,474 |

(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 "—Securities Lending Agreements."

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 from the Company.

The Company receives collateral in the form of cash or securities. Cash collateral primarily consists of short term investments. At September 30, 2018, the fair value of the cash collateral received on securities lending was $62.8 million and the fair value of security collateral received was $244.1 million. At December 31, 2017, the fair value of the cash collateral received on securities lending was $199.9 million, and the fair value of security collateral received was $276.7 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 |
| September 30, 2018 | | | | | |
| U.S. government and government agencies | $116,389 | $— | $155,273 | $ — | $271,662 |
| Corporate bonds | 22,267 | — | — | — | 22,267 |
| Equity securities | 12,957 | — | — | — | 12,957 |
| Total | $151,613 | $— | $155,273 | $ — | $306,886 |
| | | | | | $— |

| | | | | | |
|---|---|---|---|---|---|
| Gross amount of recognized liabilities for securities lending in offsetting disclosure in Note 8 | | | | | |
| Amounts related to securities lending not included in offsetting disclosure in Note 8 | | | | | $306,886 |
| | | | | | |
| December 31, 2017 | | | | | |
| U.S. government and government agencies | $343,425 | $20,309 | $76,086 | $ — | $439,820 |
| Corporate bonds | 28,003 | — | — | — | 28,003 |
| Equity securities | 8,782 | — | — | — | 8,782 |
| Total | $380,210 | $20,309 | $76,086 | $ — | $476,605 |
| Gross amount of recognized liabilities for securities lending in offsetting disclosure in Note 8 | | | | | $— |
| Amounts related to securities lending not included in offsetting disclosure in Note 8 | | | | | $476,605 |

Equity Securities, at Fair Value

At September 30, 2018, the Company held $444.1 million of equity securities, at fair value, compared to $495.8 million at December 31, 2017. Such holdings include publicly traded common stocks in the natural resources, energy, consumer staples and other sectors. Pursuant to new accounting guidance (see Note 1), changes in fair value on equity securities are recorded through net income effective January 1, 2018.

Other Investments

The following table summarizes the Company's other investments, including available for sale and fair value option components:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Available for sale securities: | | |
| Asian and emerging markets | $ — | $ 135,140 |
| Investment grade fixed income | — | 53,878 |
| Credit related funds | — | 18,365 |
| Other | — | 57,606 |
| Total available for sale (1) | — | 264,989 |
| Fair value option: | | |
| Term loan investments (par value: $1,376,013 and $1,223,453) | $ 1,351,098 | $ 1,200,882 |
| Mezzanine debt funds | 241,968 | 252,160 |
| Credit related funds | 200,226 | 175,422 |
| Investment grade fixed income | 97,347 | 102,347 |
| Asian and emerging markets | 330,999 | 258,541 |
| Other (2) | 120,038 | 147,029 |
| Total fair value option | 2,341,676 | 2,136,381 |
| Total | $ 2,341,676 | $ 2,401,370 |

(1) The Company reviewed the accounting treatment for three limited partnership investments which were accounted for as available for sale at December 31, 2017 during the 2018 first quarter and determined, based on reconsideration during the period of the Company's percentage ownership, that the equity method of accounting was appropriate for such investments.

(2) Includes fund investments with strategies in mortgage servicing rights, transportation, 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:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Fixed maturities | $ 1,374,453 | $ 1,642,855 |
| Other investments | 2,341,676 | 2,136,381 |
| Short-term investments | 248,834 | 297,426 |
| Equity securities | 132,772 | 139,575 |
| Investments accounted for using the fair value option | $ 4,097,735 | $ 4,216,237 |

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.' The Company has determined that it is not required to consolidate these investments because it is not the primary beneficiary of 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 line item:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Investments accounted for using the equity method (1) | 1,524,242 | 1,041,322 |
| Investments accounted for using the fair value option (2) | 167,860 | 130,471 |
| Total | $ 1,692,102 | $ 1,171,793 |

(1) Aggregate unfunded commitments were $1.04 billion at September 30, 2018, compared to $1.02 billion at December 31, 2017.

(2) Aggregate unfunded commitments were $111.1 million at September 30, 2018, compared to $100.4 million at December 31, 2017.

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

| | September 30, | |
|---|---|---|
| | 2018 | 2017 |
| Three Months Ended | | |
| Fixed maturities | $120,516 | $96,144 |
| Equity securities | 3,165 | 2,887 |
| Short-term investments | 4,547 | 2,957 |
| Other (1) | 39,098 | 37,957 |
| Gross investment income | 167,326 | 139,945 |
| Investment expenses | (23,302 ) | (23,486 ) |
| Net investment income | $144,024 | $116,459 |
| | | |
| Nine Months Ended | | |
| Fixed maturities | $343,513 | $284,807 |
| Equity securities | 10,510 | 9,184 |
| Short-term investments | 13,799 | 6,732 |
| Other (1) | 114,640 | 111,613 |
| Gross investment income | 482,462 | 412,336 |
| Investment expenses | (76,046 ) | (66,879 ) |
| Net investment income | $406,416 | $345,457 |

(1) Includes income distributions from investment funds, term loan investments and other items.

Equity in Net Income (Loss) of Investment Funds Accounted for Using the Equity Method
The Company recorded $16.0 million of equity in net income related to investment funds accounted for using the equity method in the 2018 third quarter, compared to $31.1 million for the 2017 third quarter, and $52.5 million for the nine months ended September 30, 2018, compared to $111.9 million for the 2017 period. 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 market 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.

Net Realized Gains (Losses)
Net realized gains (losses) were as follows, excluding net impairment losses recognized in earnings:

| | September 30, | |
|---|---|---|
| | 2018 | 2017 |
| Three Months Ended | | |
| Available for sale securities: | | |
| Gross gains on investment sales | $10,990 | $66,565 |
| Gross losses on investment sales | (34,879 ) | (39,015 ) |
| Change in fair value of assets and liabilities accounted for using the fair value option: | | |
| Fixed maturities | (6,604 ) | 4,035 |
| Other investments | (7,950 ) | 24,264 |
| Equity securities | 2,752 | 10,230 |
| Short-term investments | (471 ) | (3,320 ) |
| Equity securities, at fair value (1): | | |
| Net realized gains (losses) on sales during the period | (2,012 ) | — |

| | | |
|---|---|---|
| Net unrealized gains (losses) on equity securities still held at reporting date | 10,798 | — |
| Derivative instruments (2) | (17,556 ) | 4,298 |
| Other (3) | (6,773 ) | (782 ) |
| Net realized gains (losses) | $(51,705 ) | $66,275 |
| | | |
| Nine Months Ended | | |
| Available for sale securities: | | |
| Gross gains on investment sales | $44,732 | $212,470 |
| Gross losses on investment sales | (175,141 ) | (152,996 ) |
| Change in fair value of assets and liabilities accounted for using the fair value option: | | |
| Fixed maturities | (47,082 ) | 34,232 |
| Other investments | (14,578 ) | 42,149 |
| Equity securities | 10,650 | 16,604 |
| Short-term investments | (758 ) | 12 |
| Equity securities, at fair value (1): | | |
| Net realized gains (losses) on sales during the period | (13,298 ) | — |
| Net unrealized gains (losses) on equity securities still held at reporting date | (4,063 ) | — |
| Derivative instruments (2) | (23,665 ) | (9,653 ) |
| Other (3) | (16,111 ) | (20,655 ) |
| Net realized gains (losses) | $(239,314) | $122,163 |

(1) Pursuant to new accounting guidance (see Note 1), changes in fair value on equity securities are recorded through net income effective January 1, 2018.
(2) See Note 8 for information on the Company’s derivative instruments.
(3) Includes the re-measurement of contingent consideration liability amounts.

Net Impairment Losses Recognized in Earnings

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:

| | September 30, 2018 | September 30, 2017 |
|---|---|---|
| Three Months Ended | | |
| Fixed maturities: | | |
| Mortgage backed securities | $(73) | $(50) |
| Corporate bonds | (270) | (82) |
| Non-U.S. government securities | (149) | (178) |
| U.S. government and government agencies | — | (426) |
| Municipal bonds | — | (202) |
| Total | (492) | (938) |
| Equity securities | — | (940) |
| Net impairment losses recognized in earnings | $(492) | $(1,878) |
| | | |
| Nine Months Ended | | |
| Fixed maturities: | | |
| Mortgage backed securities | $(196) | $(1,461) |
| Corporate bonds | (631) | (1,484) |
| Non-U.S. government securities | (149) | (376) |
| Asset backed securities | (148) | — |
| U.S. government and government agencies | — | (426) |
| Municipal bonds | — | (375) |
| Total | (1,124) | (4,122) |
| Equity securities | — | (1,126) |
| Other investments | — | (167) |
| Net impairment losses recognized in earnings | $(1,124) | $(5,415) |

Net impairment losses recognized in earnings in the 2018 periods reflected foreign currency impacts and other reductions on corporate bonds and other securities. The Company believes that the $0.1 million of OTTI included in accumulated other comprehensive income at September 30, 2018 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 September 30, 2018, 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:

| | September 30, 2018 | September 30, 2017 |
|---|---|---|
| Three Months Ended | | |
| Balance at start of period | $698 | $4,437 |
| Credit loss impairments recognized on securities not previously impaired | — | — |
| Credit loss impairments recognized on securities previously impaired | — | 15 |

| | | |
|---|---|---|
| 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 | (47 ) | (689 ) |
| Balance at end of period | $651 | $3,763 |
| | | |
| Nine Months Ended | | |
| Balance at start of year | $767 | $13,138 |
| Credit loss impairments recognized on securities not previously impaired | — | 31 |
| Credit loss impairments recognized on securities previously impaired | — | 210 |
| 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 | (116 ) | (9,616 ) |
| Balance at end of period | $651 | $3,763 |

Restricted Assets

The Company is required to maintain assets on deposit, which primarily consist of fixed maturities, with various regulatory authorities to support its operations. The Company's subsidiaries maintain assets in trust accounts as collateral for 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, "Commitments and Contingencies," of the notes to consolidated financial statements in the Company's 2017 Form 10-K. The following table details the value of the Company's restricted assets:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Assets used for collateral or guarantees: | | |
| Affiliated transactions | $ 4,235,515 | $ 4,323,726 |
| Third party agreements | 2,094,952 | 1,674,304 |
| Deposits with U.S. regulatory authorities | 688,574 | 616,987 |
| Deposits with non-U.S. regulatory authorities | 61,210 | 55,895 |
| Total restricted assets | $ 7,080,251 | $ 6,670,912 |

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Reconciliation of Cash and Restricted Cash
The following table details reconciliation of cash and restricted cash within the Consolidated Balance Sheets:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Cash | $ 651,037 | $ 606,199 |
| Restricted cash (included in ‘other assets’) | $ 58,782 | $ 121,085 |
| Cash and restricted cash | $ 709,819 | $ 727,284 |

7. 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.

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. The Company did not adjust any of the prices obtained from the independent pricing sources at September 30, 2018.
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 $20.30 billion of financial assets and liabilities measured at fair value at September 30, 2018, approximately $212.2 million, or 1.1%, were priced using non-binding broker-dealer quotes. Of the $20.92 billion of financial assets and liabilities measured at fair value at December 31, 2017, approximately $181.5 million, or 0.9%, 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. 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.

•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. 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.

•Municipal bonds — valuations provided by independent pricing services, with all prices provided through index 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. 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.

•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 in mutual funds 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. 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. A small number of securities are included in Level 3 due to the lack of an available independent price source for such securities.

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 acquisition of CMG Mortgage Insurance Company and its affiliated mortgage insurance companies 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 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.

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The following table presents the Company's financial assets and liabilities measured at fair value by level at September 30, 2018:

| | Estimated Fair Value | Estimated Fair Value Measurements Using: Quoted Prices in Active Markets for Identical Assets (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) |
|---|---|---|---|---|
| Assets measured at fair value (1): | | | | |
| Available for sale securities: | | | | |
| Fixed maturities: | | | | |
| Corporate bonds | $5,639,800 | $— | $5,631,516 | $ 8,284 |
| Mortgage backed securities | 468,254 | — | 467,923 | 331 |
| Municipal bonds | 1,222,440 | — | 1,222,440 | — |
| Commercial mortgage backed securities | 682,516 | — | 682,502 | 14 |
| U.S. government and government agencies | 3,276,243 | 3,125,520 | 150,723 | — |
| Non-U.S. government securities | 1,722,606 | — | 1,722,606 | — |
| Asset backed securities | 1,606,473 | — | 1,606,473 | — |
| Total | 14,618,332 | 3,125,520 | 11,484,183 | 8,629 |
| Short-term investments | 961,799 | 819,294 | 142,505 | — |
| Equity securities, at fair value | 456,836 | 408,436 | 48,400 | — |
| Derivative instruments (4) | 37,341 | — | 37,341 | — |
| Fair value option: | | | | |
| Corporate bonds | 912,927 | — | 903,321 | 9,606 |
| Non-U.S. government bonds | 105,019 | — | 105,019 | — |
| Mortgage backed securities | 15,845 | — | 15,845 | — |
| Municipal bonds | 7,037 | — | 7,037 | — |
| Commercial mortgage backed securities | — | — | — | — |
| Asset backed securities | 213,971 | — | 213,971 | — |
| U.S. government and government agencies | 119,654 | 119,547 | 107 | — |
| Short-term investments | 248,834 | 230,836 | 17,998 | — |
| Equity securities | 132,772 | 67,441 | 65,331 | — |
| Other investments | 1,303,349 | 49,579 | 1,190,839 | 62,931 |
| Other investments measured at net asset value (2) | 1,038,327 | | | |
| Total | 4,097,735 | 467,403 | 2,519,468 | 72,537 |
| Total assets measured at fair value | $20,172,043 | $4,820,653 | $14,231,897 | $ 81,166 |
| Liabilities measured at fair value: | | | | |
| Contingent consideration liabilities | $(65,641) | $— | $— | $ (65,641) |
| Securities sold but not yet purchased (3) | (9,065) | — | (9,065) | — |
| Derivative instruments (4) | (49,189) | — | (49,189) | — |

| | | | | |
|---|---|---|---|---|
| Total liabilities measured at fair value | $(123,895 ) | $— | $(58,254 ) | $ (65,641 ) |

(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 6, “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 8, “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, 2017:

| | | Estimated Fair Value Measurements Using: | | |
|---|---|---|---|---|
| | Estimated Fair Value | Quoted Prices in Active Markets for Identical Assets (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) |
| Assets measured at fair value (1): | | | | |
| Available for sale securities: | | | | |
| Fixed maturities: | | | | |
| Corporate bonds | $4,434,439 | $— | $4,424,979 | $ 9,460 |
| Mortgage backed securities | 316,141 | — | 315,754 | 387 |
| Municipal bonds | 2,158,840 | — | 2,158,840 | — |
| Commercial mortgage backed securities | 545,817 | — | 545,277 | 540 |
| U.S. government and government agencies | 3,484,257 | 3,408,902 | 75,355 | — |
| Non-U.S. government securities | 1,612,754 | — | 1,612,754 | — |
| Asset backed securities | 1,780,143 | — | 1,775,143 | 5,000 |
| Total | 14,332,391 | 3,408,902 | 10,908,102 | 15,387 |
| | | | | |
| Equity securities | 504,333 | 498,182 | 6,151 | — |
| | | | | |
| Short-term investments | 1,469,042 | 1,420,732 | 48,310 | — |
| | | | | |
| Other investments | 76,427 | 74,611 | 1,816 | — |
| Other investments measured at net asset value (2) | 188,562 | | | |
| Total other investments | 264,989 | 74,611 | 1,816 | — |
| | | | | |
| Derivative instruments (4) | 15,747 | — | 15,747 | — |
| | | | | |
| Fair value option: | | | | |
| Corporate bonds | 1,068,725 | — | 1,056,508 | 12,217 |
| Non-U.S. government bonds | 195,788 | — | 195,788 | — |
| Mortgage backed securities | 20,491 | — | 20,491 | — |
| Municipal bonds | 15,210 | — | 15,210 | — |
| Commercial mortgage backed securities | 11,997 | — | 11,997 | — |
| Asset backed securities | 99,354 | — | 99,354 | — |
| U.S. government and government agencies | 231,290 | 231,019 | 271 | — |
| Short-term investments | 297,426 | 40,166 | 257,260 | — |
| Equity securities | 139,575 | 67,440 | 72,135 | — |
| Other investments | 1,128,094 | 82,291 | 986,636 | 59,167 |
| Other investments measured at net asset value (2) | 1,008,287 | | | |
| Total | 4,216,237 | 420,916 | 2,715,650 | 71,384 |
| | | | | |
| Total assets measured at fair value | $20,802,739 | $5,823,343 | $13,695,776 | $ 86,771 |

| | | | | |
|---|---|---|---|---|
| Liabilities measured at fair value: | | | | |
| Contingent consideration liabilities | $(60,996 ) | $— | $— | $ (60,996 ) |
| Securities sold but not yet purchased (3) | (34,375 ) | — | (34,375 ) | — |
| Derivative instruments (4) | (20,464 ) | — | (20,464 ) | — |
| Total liabilities measured at fair value | $(115,835 ) | $— | $(54,839 ) | $ (60,996 ) |

(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 6, “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 8, “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:

| | Assets | | | | | Liabilities |
|---|---|---|---|---|---|---|
| s | Available For Sale | | Fair Value Option | | | |
| | Structured Securities (1) | Corporate Bonds | Corporate Bonds | Other Investments | Total | Contingent Consideration Liabilities |
| Three Months Ended September 30, 2018 | | | | | | |
| Balance at beginning of period | $376 | $8,773 | $11,335 | $ 58,214 | $78,698 | $ (63,930) |
| Total gains or (losses) (realized/unrealized) | | | | | | |
| Included in earnings (2) | — | (1) | (503) | (1,459) | (1,963) | (1,711) |
| Included in other comprehensive income | 2 | (32) | — | — | (30) | — |
| Purchases, issuances, sales and settlements | | | | | | |
| Purchases | — | — | — | 6,250 | 6,250 | — |
| Issuances | — | — | — | — | — | — |
| Sales | — | — | — | (74) | (74) | — |
| Settlements | (33) | (456) | (1,226) | — | (1,715) | — |
| Transfers in and/or out of Level 3 | — | — | — | — | — | — |
| Balance at end of period | $345 | $8,284 | $9,606 | $ 62,931 | $81,166 | $ (65,641) |
| | | | | | | |
| Three Months Ended September 30, 2017 | | | | | | |
| Balance at beginning of period | $— | $11,570 | $— | $ 25,000 | $36,570 | $ (57,246) |
| Total gains or (losses) (realized/unrealized) | | | | | | |
| Included in earnings (2) | — | — | — | — | — | (2,002) |
| Included in other comprehensive income | — | 289 | — | — | 289 | — |
| Purchases, issuances, sales and settlements | | | | | | |
| Purchases | — | — | — | 1,348 | 1,348 | — |
| Issuances | — | — | — | — | — | — |
| Sales | — | — | — | — | — | — |
| Settlements | — | — | — | — | — | — |
| Transfers in and/or out of Level 3 | 5,949 | 132 | 11,471 | 4,798 | 22,350 | — |
| Balance at end of period | $5,949 | $11,991 | $11,471 | $ 31,146 | $60,557 | $ (59,248) |
| | | | | | | |
| Nine Months Ended September 30, 2018 | | | | | | |
| Balance at beginning of year | $5,927 | $9,460 | $12,217 | $ 59,167 | $86,771 | $ (60,996) |
| Total gains or (losses) (realized/unrealized) | | | | | | |
| Included in earnings (2) | 4 | (1) | (1,115) | (1,838) | (2,950) | (4,645) |
| Included in other comprehensive income | (6) | (200) | — | — | (206) | — |
| Purchases, issuances, sales and settlements | | | | | | |
| Purchases | — | 393 | — | 6,250 | 6,643 | — |
| Issuances | — | — | — | — | — | — |
| Sales | (5,003) | — | — | (148) | (5,151) | — |
| Settlements | (577) | (1,368) | (1,496) | (500) | (3,941) | — |
| Transfers in and/or out of Level 3 | — | — | — | — | — | — |
| Balance at end of period | $345 | $8,284 | $9,606 | $ 62,931 | $81,166 | $ (65,641) |
| | | | | | | |
| Nine Months Ended September 30, 2017 | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Balance at beginning of year | $11,289 | $18,344 | $— | $ 25,000 | $54,633 | $ (122,350 ) |
| Total gains or (losses) (realized/unrealized) | | | | | | |
| Included in earnings (2) | 3,779 | 893 | — | — | 4,672 | (9,089 ) |
| Included in other comprehensive income | — | 289 | — | — | 289 | — |
| Purchases, issuances, sales and settlements | | | | | | |
| Purchases | — | 4,935 | — | 1,348 | 6,283 | — |
| Issuances | — | — | — | — | — | — |
| Sales | (13,640 ) | (12,602 ) | — | — | (26,242 ) | — |
| Settlements | (1,428 ) | — | — | — | (1,428 ) | 72,191 |
| Transfers in and/or out of Level 3 | 5,949 | 132 | 11,471 | 4,798 | 22,350 | — |
| Balance at end of period | $5,949 | $11,991 | $11,471 | $ 31,146 | $60,557 | $ (59,248 ) |

(1) Includes asset backed securities, mortgage backed securities and commercial mortgage backed securities.
(2) Gains or losses 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 September 30, 2018, due to their respective short maturities. As these financial instruments are not actively traded, their respective fair values are classified within Level 2.

At September 30, 2018, the Company’s senior notes were carried at their cost, net of debt issuance costs, of $1.73 billion and had a fair value of $1.88 billion. At December 31, 2017, Company’s senior notes were carried at their cost, net of debt issuance costs, of $1.73 billion and had a fair value of $2.04 billion. 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 values of the senior notes are classified within Level 2.

## 8. 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) |
| September 30, 2018 | | | |
| Futures contracts (2) | $2,794 | $(14,085) | $1,547,523 |
| Foreign currency forward contracts (2) | 8,203 | (7,490) | 1,315,080 |
| TBAs (3) | 25,207 | — | 24,964 |
| Other (2) | 26,344 | (27,614) | 2,220,054 |
| Total | $62,548 | $(49,189) | |
| | | | |
| December 31, 2017 | | | |
| Futures contracts (2) | $3,371 | $(1,542) | $1,452,497 |
| Foreign currency forward contracts (2) | 4,478 | (4,381) | 686,941 |
| TBAs (3) | 27,184 | — | 27,066 |
| Other (2) | 7,898 | (14,541) | 1,457,345 |
| Total | $42,931 | $(20,464) | |

(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.’

(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 September 30, 2018 or December 31, 2017.

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. Contractual close-out netting reduces derivatives credit exposure from gross to net exposure. The remaining derivatives included in the table above were not subject to a master netting agreement.

At September 30, 2018, asset derivatives and liability derivatives of $60.4 million and $31.9 million, respectively, were subject to a master netting agreement, compared to $40.6 million and $19.6 million, respectively, at December 31, 2017.

The remaining derivatives included in the preceding table were not subject to a master netting agreement.
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: | September 30, 2018 | 2017 |
|---|---|---|
| Three Months Ended | | |
| Net realized gains (losses): | | |
| Futures contracts | $(15,399) | $4,899 |
| Foreign currency forward contracts | (5,458) | (228) |
| TBAs | (3) | 122 |
| Other | 3,304 | (495) |
| Total | $(17,556) | $4,298 |
| Nine Months Ended | | |
| Net realized gains (losses): | | |
| Futures contracts | $(10,609) | $7,309 |
| Foreign currency forward contracts | (13,074) | (12,266) |
| TBAs | (100) | 143 |
| Other | 118 | (4,839) |
| Total | $(23,665) | $(9,653) |

## 9. Commitments and Contingencies

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 $1.57 billion at September 30, 2018, compared to $1.70 billion at December 31, 2017.
Interest Paid
Interest paid on the Company’s senior notes and other borrowings were $67.6 million for the nine months ended September 30, 2018, compared to $64.6 million for the 2017 period.

## 10. Variable Interest Entities and Noncontrolling Interests

A variable interest entity (“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, 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. Watford Holdings Ltd. is the parent of Watford Re Ltd., a multi-line Bermuda reinsurance company (together with Watford Holdings Ltd., “Watford Re”). Watford Re is considered a VIE and the Company concluded that it is the primary beneficiary of Watford Re. As such, the results

of Watford Re are included in the Company’s consolidated financial statements.
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 reinsurance transactions.

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The following table provides the carrying amount and balance sheet caption in which the assets and liabilities of Watford Re are reported:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Assets | | |
| Investments accounted for using the fair value option | $2,424,009 | $2,426,066 |
| Fixed maturities available for sale, at fair value | 305,388 | — |
| Equity securities, at fair value | 46,581 | — |
| Cash | 64,684 | 54,503 |
| Accrued investment income | 17,650 | 18,261 |
| Premiums receivable | 217,582 | 177,492 |
| Reinsurance recoverable on unpaid and paid losses and LAE | 69,849 | 42,777 |
| Ceded unearned premiums | 63,772 | 24,762 |
| Deferred acquisition costs | 84,980 | 85,961 |
| Receivable for securities sold | 36,153 | 36,374 |
| Goodwill and intangible assets | 7,650 | 7,650 |
| Other assets | 81,152 | 140,808 |
| Total assets of consolidated VIE | $3,419,450 | $3,014,654 |
| | | |
| Liabilities | | |
| Reserves for losses and loss adjustment expenses | $962,927 | $798,262 |
| Unearned premiums | 407,957 | 330,644 |
| Reinsurance balances payable | 24,696 | 18,424 |
| Revolving credit agreement borrowings | 429,756 | 441,132 |
| Payable for securities purchased | 135,690 | 42,501 |
| Other liabilities | 252,171 | 215,186 |
| Total liabilities of consolidated VIE | $2,213,197 | $1,846,149 |
| | | |
| Redeemable noncontrolling interests | $220,899 | $220,622 |

For the nine months ended September 30, 2018, Watford Re generated $174.3 million of cash provided by operating activities, $208.3 million of cash used for investing activities and $24.2 million of cash used for financing activities, compared to $221.9 million of cash provided by operating activities, $386.8 million of cash used for investing activities and $152.5 million of cash provided by financing activities for the nine months ended September 30, 2017.

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 September 30, 2018. 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:

| | September 30, 2018 | 2017 |
|---|---|---|
| Three Months Ended | | |
| Balance, beginning of period | $861,153 | $877,456 |
| Amounts attributable to noncontrolling interests | 16,759 | (16,147 ) |

| | | |
|---|---|---|
| Other comprehensive income attributable to noncontrolling interests | (1,158 ) | (411 ) |
| Balance, end of period | $876,754 | $860,898 |
| | | |
| Nine Months Ended | | |
| Balance, beginning of year | $843,411 | $851,854 |
| Amounts attributable to noncontrolling interests | 36,251 | 9,523 |
| Other comprehensive income attributable to noncontrolling interests | (2,908 ) | (479 ) |
| Balance, end of period | $876,754 | $860,898 |

Redeemable noncontrolling interests

The Company accounts for redeemable noncontrolling interests in the mezzanine section of its consolidated balance sheets in accordance with applicable accounting guidance. Such redeemable noncontrolling interests relate to the 9,065,200 cumulative redeemable preference shares ("Watford Preference Shares") issued in March 2014 with a par value of $0.01 per share and a liquidation preference of $25.00 per share. Preferred dividends, including the accretion of the discount and issuance costs, are included in 'net (income) loss attributable to noncontrolling interests' in the Company's consolidated statements of income.

The following table sets forth activity in the redeemable non-controlling interests:

| | September 30, | |
|---|---|---|
| | 2018 | 2017 |
| Three Months Ended | | |
| Balance, beginning of period | $206,105 | $205,736 |
| Accretion of preference share issuance costs | 94 | 93 |
| Balance, end of period | $206,199 | $205,829 |
| | | |
| Nine Months Ended | | |
| Balance, beginning of year | $205,922 | $205,553 |
| Accretion of preference share issuance costs | 277 | 276 |
| Balance, end of period | $206,199 | $205,829 |

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The portion of Watford Re's income or loss attributable to third party investors, recorded in the Company's consolidated statements of income in 'net (income) loss attributable to noncontrolling interests,' are summarized in the table below:

| | September 30, 2018 | September 30, 2017 |
|---|---|---|
| Three Months Ended | | |
| Amounts attributable to non-redeemable noncontrolling interests | $(16,759) | $16,147 |
| Dividends attributable to redeemable noncontrolling interests | (4,599) | (4,586) |
| Net (income) loss attributable to noncontrolling interests | $(21,358) | $11,561 |
| | | |
| Nine Months Ended | | |
| Amounts attributable to non-redeemable noncontrolling interests | $(36,251) | $(9,523) |
| Dividends attributable to redeemable noncontrolling interests | (13,769) | (13,756) |
| Net (income) loss attributable to noncontrolling interests | $(50,020) | $(23,279) |

Bellemeade Re

The Company has entered into various aggregate excess of loss reinsurance agreements with various special purpose reinsurance companies domiciled in Bermuda (the "Bellemeade Agreements"). At the time the Bellemeade Agreements were entered into, the applicability of the accounting guidance that addresses VIEs was evaluated. As a result of the evaluation of the Bellemeade Agreements, the Company concluded that these entities are VIEs. However, given that the ceding insurers do not have the unilateral power to direct those activities that are significant to their economic performance, the Company does not consolidate such entities in its consolidated financial statements.

The following table presents total assets of the Bellemeade entities, as well as the Company's maximum exposure to loss associated with these VIEs as of September 30, 2018 and December 31, 2017:

| Bellemeade Entities (Issue Date) | Total VIE Assets | Maximum Exposure to Loss On-Balance Sheet | Maximum Exposure to Loss Off-Balance Sheet | Total |
|---|---|---|---|---|
| Sep 30, 2018 | | | | |
| Bellemeade 2015-1 Ltd. (Jul-15) | $59,729 | $166 | $ 314 | $480 |
| Bellemeade 2016-1 Ltd. (May-16) | 31,765 | 4 | 28 | 32 |
| Bellemeade 2017-1 Ltd. (Oct-17) | 319,635 | 198 | 1,104 | 1,302 |
| Bellemeade 2018-1 Ltd. (Apr-18) | 374,460 | 32 | 1,194 | 1,226 |
| Bellemeade 2018-2 Ltd. (Aug-18) | 653,278 | 388 | 2,395 | 2,783 |
| Total | $1,438,867 | $788 | $ 5,035 | $5,823 |
| Dec 31, 2017 | | | | |
| Bellemeade 2015-1 Ltd. (Jul-15) | $92,390 | $471 | $ 832 | $1,303 |
| Bellemeade 2016-1 Ltd. (May-16) | 135,201 | 20 | 527 | 547 |
| Bellemeade 2017-1 Ltd. (Oct-17) | 347,139 | 391 | 1,867 | 2,258 |
| Total | $574,730 | $882 | $ 3,226 | $4,108 |

See Note 15, "Subsequent Events."

11. Other Comprehensive Income (Loss)

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 Three Months Ended September 30, 2018 | 2017 | Nine Months Ended September 30, 2018 | 2017 |
|---|---|---|---|---|---|
| Unrealized appreciation on available-for-sale investments | | | | | |
| | Net realized gains (losses) | $(23,888) | $27,550 | $(130,409) | $59,474 |
| | Other-than-temporary impairment losses | (492) | (1,878) | (1,124) | (5,415) |
| | Total before tax | (24,380) | 25,672 | (131,533) | 54,059 |
| | Income tax (expense) benefit | 1,177 | (1,760) | 9,226 | (7,879) |
| | Net of tax | $(23,203) | $23,912 | $(122,307) | $46,180 |

| | Before Tax Amount | Tax Expense (Benefit) | Net of Tax Amount |
|---|---|---|---|
| Three Months Ended September 30, 2018 | | | |
| Unrealized appreciation (decline) in value of investments: | | | |
| Unrealized holding gains (losses) arising during period | $(57,812) | $(4,504) | $(53,308) |
| Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss) | — | — | — |
| Less reclassification of net realized gains (losses) included in net income | (24,380) | (1,177) | (23,203) |
| Foreign currency translation adjustments | 2,167 | 104 | 2,063 |
| Other comprehensive income (loss) | $(31,265) | $(3,223) | $(28,042) |
| | | | |
| Three Months Ended September 30, 2017 | | | |
| Unrealized appreciation (decline) in value of investments: | | | |
| Unrealized holding gains (losses) arising during period | $69,330 | $2,868 | $66,462 |
| Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss) | — | — | — |
| Less reclassification of net realized gains (losses) included in net income | 25,672 | 1,760 | 23,912 |
| Foreign currency translation adjustments | 8,590 | 310 | 8,280 |
| Other comprehensive income (loss) | $52,248 | $1,418 | $50,830 |
| | | | |
| Nine Months Ended September 30, 2018 | | | |
| Unrealized appreciation (decline) in value of investments: | | | |
| Unrealized holding gains (losses) arising during period | $(335,789) | $(30,533) | $(305,256) |
| Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss) | — | — | — |
| Less reclassification of net realized gains (losses) included in net income | (131,533) | (9,226) | (122,307) |
| Foreign currency translation adjustments | (9,102) | 148 | (9,250) |
| Other comprehensive income (loss) | $(213,358) | $(21,159) | $(192,199) |
| | | | |
| Nine Months Ended September 30, 2017 | | | |
| Unrealized appreciation (decline) in value of investments: | | | |

| | | | |
|---|---|---|---|
| Unrealized holding gains (losses) arising during period | $288,813 | $28,590 | $260,223 |
| Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss) | — | — | — |
| Less reclassification of net realized gains (losses) included in net income | 54,059 | 7,879 | 46,180 |
| Foreign currency translation adjustments | 30,264 | 563 | 29,701 |
| Other comprehensive income (loss) | $265,018 | $21,274 | $243,744 |

12. Guarantor Financial Information

The following tables present condensed financial information for Arch Capital, Arch-U.S., a 100% owned subsidiary of Arch Capital, and Arch Capital's other subsidiaries.

| | September 30, 2018 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Balance Sheet | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Assets | | | | | |
| Total investments | $183 | $198,843 | $21,482,102 | $(14,700) | $21,666,428 |
| Cash | 8,058 | 52,784 | 590,195 | — | 651,037 |
| Investments in subsidiaries | 9,655,977 | 4,126,722 | — | (13,782,699) | — |
| Due from subsidiaries and affiliates | 16 | 2 | 1,870,606 | (1,870,624) | — |
| Premiums receivable | — | — | 1,852,571 | (545,105) | 1,307,466 |
| Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses | — | — | 8,264,202 | (5,514,417) | 2,749,785 |
| Contractholder receivables | — | — | 2,067,268 | — | 2,067,268 |
| Ceded unearned premiums | — | — | 1,809,979 | (798,129) | 1,011,850 |
| Deferred acquisition costs | — | — | 632,637 | (59,650) | 572,987 |
| Goodwill and intangible assets | — | — | 566,662 | — | 566,662 |
| Other assets | 11,966 | 30,477 | 1,759,537 | (142,929) | 1,659,051 |
| Total assets | $9,676,200 | $4,408,828 | $40,895,759 | $(22,728,253) | $32,252,534 |
| | | | | | |
| Liabilities | | | | | |
| Reserve for losses and loss adjustment expenses | $— | $— | $16,847,736 | $(5,293,415) | $11,554,321 |
| Unearned premiums | — | — | 4,666,508 | (798,129) | 3,868,379 |
| Reinsurance balances payable | — | — | 950,041 | (545,105) | 404,936 |
| Contractholder payables | — | — | 2,067,268 | — | 2,067,268 |
| Collateral held for insured obligations | — | — | 249,723 | | 249,723 |
| Senior notes | 297,125 | 494,697 | 941,542 | — | 1,733,364 |
| Revolving credit agreement borrowings | — | — | 554,756 | — | 554,756 |
| Due to subsidiaries and affiliates | 3,386 | 542,365 | 1,324,873 | (1,870,624) | — |
| Other liabilities | 20,541 | 34,661 | 1,750,063 | (423,579) | 1,381,686 |
| Total liabilities | 321,052 | 1,071,723 | 29,352,510 | (8,930,852) | 21,814,433 |
| | | | | | |
| Redeemable noncontrolling interests | — | — | 220,899 | (14,700) | 206,199 |
| | | | | | |
| Shareholders' Equity | | | | | |
| Total shareholders' equity available to Arch | 9,355,148 | 3,337,105 | 10,445,596 | (13,782,701) | 9,355,148 |
| Non-redeemable noncontrolling interests | — | — | 876,754 | — | 876,754 |
| Total shareholders' equity | 9,355,148 | 3,337,105 | 11,322,350 | (13,782,701) | 10,231,902 |
| | | | | | |
| Total liabilities, noncontrolling interests and shareholders' equity | $9,676,200 | $4,408,828 | $40,895,759 | $(22,728,253) | $32,252,534 |

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| | December 31, 2017 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Balance Sheet | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Assets | | | | | |
| Total investments | $96,540 | $46,281 | $21,711,891 | $(14,700) | $21,840,012 |
| Cash | 9,997 | 30,380 | 565,822 | — | 606,199 |
| Investments in subsidiaries | 9,396,621 | 4,097,765 | — | (13,494,386) | — |
| Due from subsidiaries and affiliates | 394 | — | 1,828,864 | (1,829,258) | — |
| Premiums receivable | — | — | 2,967,701 | (1,832,452) | 1,135,249 |
| Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses | — | — | 8,442,192 | (5,902,049) | 2,540,143 |
| Contractholder receivables | — | — | 1,978,414 | — | 1,978,414 |
| Ceded unearned premiums | — | — | 2,165,789 | (1,239,178) | 926,611 |
| Deferred acquisition costs | — | — | 693,053 | (157,229) | 535,824 |
| Goodwill and intangible assets | — | — | 652,611 | — | 652,611 |
| Other assets | 13,176 | 49,585 | 1,860,505 | (86,671) | 1,836,595 |
| Total assets | $9,516,728 | $4,224,011 | $42,866,842 | $(24,555,923) | $32,051,658 |
| Liabilities | | | | | |
| Reserve for losses and loss adjustment expenses | $— | $— | $17,236,401 | $(5,852,609) | $11,383,792 |
| Unearned premiums | — | — | 4,861,491 | (1,239,177) | 3,622,314 |
| Reinsurance balances payable | — | — | 2,155,947 | (1,832,451) | 323,496 |
| Contractholder payables | — | — | 1,978,414 | — | 1,978,414 |
| Collateral held for insured obligations | — | — | 240,183 | — | 240,183 |
| Senior notes | 297,053 | 494,621 | 941,210 | — | 1,732,884 |
| Revolving credit agreement borrowings | — | — | 816,132 | — | 816,132 |
| Due to subsidiaries and affiliates | 235 | 536,919 | 1,292,104 | (1,829,258) | — |
| Other liabilities | 22,838 | 29,317 | 1,949,696 | (293,343) | 1,708,508 |
| Total liabilities | 320,126 | 1,060,857 | 31,471,578 | (11,046,838) | 21,805,723 |
| Redeemable noncontrolling interests | — | — | 220,622 | (14,700) | 205,922 |
| Shareholders’ Equity | | | | | |
| Total shareholders’ equity available to Arch | 9,196,602 | 3,163,154 | 10,331,231 | (13,494,385) | 9,196,602 |
| Non-redeemable noncontrolling interests | — | — | 843,411 | — | 843,411 |
| Total shareholders’ equity | 9,196,602 | 3,163,154 | 11,174,642 | (13,494,385) | 10,040,013 |
| Total liabilities, noncontrolling interests and shareholders’ equity | $9,516,728 | $4,224,011 | $42,866,842 | $(24,555,923) | $32,051,658 |

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

| | Three Months Ended September 30, 2018 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Statement of Income and Comprehensive Income | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Revenues | | | | | |
| Net premiums earned | $— | $ — | $ 1,290,878 | $ — | $ 1,290,878 |
| Net investment income | 2 | 1,202 | 165,289 | (22,469 ) | 144,024 |
| Net realized gains (losses) | — | (64 ) | (51,641 ) | — | (51,705 ) |
| Net impairment losses recognized in earnings | — | — | (492 ) | — | (492 ) |
| Other underwriting income | — | — | 5,823 | — | 5,823 |
| Equity in net income (loss) of investment funds accounted for using the equity method | — | — | 15,982 | — | 15,982 |
| Other income (loss) | (195 ) | — | (531 ) | — | (726 ) |
| Total revenues | (193 ) | 1,138 | 1,425,308 | (22,469 ) | 1,403,784 |
| | | | | | |
| Expenses | | | | | |
| Losses and loss adjustment expenses | — | — | 699,420 | — | 699,420 |
| Acquisition expenses | — | — | 201,602 | — | 201,602 |
| Other operating expenses | — | — | 161,098 | — | 161,098 |
| Corporate expenses | 15,170 | 446 | (1,281 ) | — | 14,335 |
| Amortization of intangible assets | — | — | 26,315 | — | 26,315 |
| Interest expense | 5,536 | 12,075 | 34,276 | (22,157 ) | 29,730 |

| | | | | | |
|---|---|---|---|---|---|
| Net foreign exchange (gains) losses | — | — | (10,426 ) | (412 ) | (10,838 ) |
| Total expenses | 20,706 | 12,521 | 1,111,004 | (22,569 ) | 1,121,662 |
| Income (loss) before income taxes | (20,899 ) | (11,383 ) | 314,304 | 100 | 282,122 |
| Income tax (expense) benefit | — | 2,276 | (35,632 ) | — | (33,356 ) |
| Income (loss) before equity in net income of subsidiaries | (20,899 ) | (9,107 ) | 278,672 | 100 | 248,766 |
| Equity in net income of subsidiaries | 248,307 | 92,906 | — | (341,213 ) | — |
| Net income | 227,408 | 83,799 | 278,672 | (341,113 ) | 248,766 |
| Net (income) loss attributable to noncontrolling interests | — | — | (21,669 ) | 311 | (21,358 ) |
| Net income available to Arch | 227,408 | 83,799 | 257,003 | (340,802 ) | 227,408 |
| Preferred dividends | (10,402 ) | — | — | — | (10,402 ) |
| Net income available to Arch common shareholders | $217,006 | $ 83,799 | $257,003 | $ (340,802 ) | $217,006 |
| Comprehensive income available to Arch | $200,524 | $ 77,389 | $230,565 | $ (307,954 ) | $200,524 |

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

| | Three Months Ended September 30, 2017 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Statement of Income and Comprehensive Income | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Revenues | | | | | |
| Net premiums earned | $— | $ — | $ 1,261,886 | $ — | $ 1,261,886 |
| Net investment income | 117 | 151 | 138,784 | (22,593) | 116,459 |
| Net realized gains (losses) | — | — | 66,275 | — | 66,275 |
| Net impairment losses recognized in earnings | — | — | (1,878) | — | (1,878) |
| Other underwriting income | — | — | 6,064 | — | 6,064 |
| Equity in net income (loss) of investment funds accounted for using the equity method | — | — | 31,090 | — | 31,090 |
| Other income (loss) | (102) | — | (240) | — | (342) |
| Total revenues | 15 | 151 | 1,501,981 | (22,593) | 1,479,554 |
| | | | | | |
| Expenses | | | | | |
| Losses and loss adjustment expenses | — | — | 1,046,141 | — | 1,046,141 |
| Acquisition expenses | — | — | 193,854 | — | 193,854 |
| Other operating expenses | — | — | 170,127 | — | 170,127 |
| Corporate expenses | 14,576 | 410 | 2,112 | — | 17,098 |
| Amortization of intangible assets | — | — | 31,824 | — | 31,824 |
| Interest expense | 5,934 | 12,037 | 33,811 | (22,272) | 29,510 |

| | | | | | |
|---|---|---|---|---|---|
| Net foreign exchange (gains) losses | — | — | 20,510 | 7,518 | 28,028 |
| Total expenses | 20,510 | 12,447 | 1,498,379 | (14,754) | 1,516,582 |
| Income (loss) before income taxes | (20,495) | (12,296) | 3,602 | (7,839) | (37,028) |
| Income tax (expense) benefit | — | 4,432 | (12,621) | — | (8,189) |
| Income (loss) before equity in net income of subsidiaries | (20,495) | (7,864) | (9,019) | (7,839) | (45,217) |
| Equity in net income of subsidiaries | (13,161) | 50,057 | — | (36,896) | — |
| Net income (loss) | (33,656) | 42,193 | (9,019) | (44,735) | (45,217) |
| Net (income) loss attributable to noncontrolling interests | — | — | 11,238 | 323 | 11,561 |
| Net income (loss) available to Arch | (33,656) | 42,193 | 2,219 | (44,412) | (33,656) |
| Preferred dividends | (12,369) | — | — | — | (12,369) |
| Loss on redemption of preferred shares | (6,735) | — | — | — | (6,735) |
| Net income (loss) available to Arch common shareholders | $(52,760) | $ 42,193 | $2,219 | $ (44,412) | $(52,760) |
| Comprehensive income available to Arch | $17,585 | $ 47,676 | $45,936 | $ (93,612) | $17,585 |

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

| | Nine Months Ended September 30, 2018 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Statement of Income and Comprehensive Income | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Revenues | | | | | |
| Net premiums earned | $— | $— | $3,862,540 | $— | $3,862,540 |
| Net investment income | 37 | 2,020 | 471,588 | (67,229) | 406,416 |
| Net realized gains (losses) | 29 | (71) | (239,272) | — | (239,314) |
| Net impairment losses recognized in earnings | — | — | (1,124) | — | (1,124) |
| Other underwriting income | — | — | 15,046 | — | 15,046 |
| Equity in net income (loss) of investment funds accounted for using the equity method | — | — | 52,523 | — | 52,523 |
| Other income (loss) | 2,066 | — | 395 | — | 2,461 |
| Total revenues | 2,132 | 1,949 | 4,161,696 | (67,229) | 4,098,548 |
| | | | | | |
| Expenses | | | | | |
| Losses and loss adjustment expenses | — | — | 2,062,433 | — | 2,062,433 |
| Acquisition expenses | — | — | 595,816 | — | 595,816 |
| Other operating expenses | — | — | 512,294 | — | 512,294 |
| Corporate expenses | 47,981 | 1,205 | 2,973 | — | 52,159 |
| Amortization of intangible assets | — | — | 79,523 | — | 79,523 |
| Interest expense | 16,609 | 36,014 | 104,359 | (66,272) | 90,710 |

| | | | | | |
|---|---|---|---|---|---|
| Net foreign exchange (gains) losses | 29 | — | (37,347) | (7,505) | (44,823) |
| Total expenses | 64,619 | 37,219 | 3,320,051 | (73,777) | 3,348,112 |
| | | | | | |
| Income (loss) before income taxes | (62,487) | (35,270) | 841,645 | 6,548 | 750,436 |
| Income tax (expense) benefit | — | 7,704 | (86,643) | — | (78,939) |
| Income (loss) before equity in net income of subsidiaries | (62,487) | (27,566) | 755,002 | 6,548 | 671,497 |
| Equity in net income of subsidiaries | 683,964 | 266,053 | — | (950,017) | — |
| Net income | 621,477 | 238,487 | 755,002 | (943,469) | 671,497 |
| Net (income) loss attributable to noncontrolling interests | — | — | (50,976) | 956 | (50,020) |
| Net income available to Arch | 621,477 | 238,487 | 704,026 | (942,513) | 621,477 |
| Preferred dividends | (31,242) | — | — | — | (31,242) |
| Loss on redemption of preferred shares | (2,710) | — | — | — | (2,710) |
| Net income available to Arch common shareholders | $587,525 | $238,487 | $704,026 | $(942,513) | $587,525 |
| | | | | | |
| Comprehensive income available to Arch | $432,186 | $153,992 | $522,448 | $(676,440) | $432,186 |

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

| | Nine Months Ended September 30, 2017 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Statement of Income and Comprehensive Income | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Revenues | | | | | |
| Net premiums earned | $— | $— | $3,619,777 | $— | $3,619,777 |
| Net investment income | 123 | 1,151 | 410,392 | (66,209) | 345,457 |
| Net realized gains (losses) | — | — | 122,163 | — | 122,163 |
| Net impairment losses recognized in earnings | — | — | (5,415) | — | (5,415) |
| Other underwriting income | — | — | 15,519 | — | 15,519 |
| Equity in net income (loss) of investment funds accounted for using the equity method | — | — | 111,884 | — | 111,884 |
| Other income (loss) | (368) | — | (2,750) | — | (3,118) |
| Total revenues | (245) | 1,151 | 4,271,570 | (66,209) | 4,206,267 |
| | | | | | |
| Expenses | | | | | |
| Losses and loss adjustment expenses | — | — | 2,288,571 | — | 2,288,571 |
| Acquisition expenses | — | — | 566,579 | — | 566,579 |
| Other operating expenses | — | — | 514,827 | — | 514,827 |
| Corporate expenses | 53,639 | 3,727 | 12,400 | — | 69,766 |
| Amortization of intangible assets | — | — | 93,942 | — | 93,942 |
| Interest expense | 18,024 | 35,956 | 98,197 | (65,242) | 86,935 |

| | | | | | |
|---|---|---|---|---|---|
| Net foreign exchange (gains) losses | — | — | 65,701 | 21,274 | 86,975 |
| Total expenses | 71,663 | 39,683 | 3,640,217 | (43,968) | 3,707,595 |
| | | | | | |
| Income (loss) before income taxes | (71,908) | (38,532) | 631,353 | (22,241) | 498,672 |
| Income tax (expense) benefit | — | 13,374 | (84,129) | — | (70,755) |
| Income (loss) before equity in net income of subsidiaries | (71,908) | (25,158) | 547,224 | (22,241) | 427,917 |
| Equity in net income of subsidiaries | 476,546 | 213,586 | — | (690,132) | — |
| Net income | 404,638 | 188,428 | 547,224 | (712,373) | 427,917 |
| Net (income) loss attributable to noncontrolling interests | — | — | (24,247) | 968 | (23,279) |
| Net income available to Arch | 404,638 | 188,428 | 522,977 | (711,405) | 404,638 |
| Preferred dividends | (34,936) | — | — | — | (34,936) |
| Loss on redemption of preferred shares | (6,735) | — | — | — | (6,735) |
| Net income available to Arch common shareholders | $362,967 | $188,428 | $522,977 | $(711,405) | $362,967 |
| | | | | | |
| Comprehensive income available to Arch | $648,861 | $240,759 | $745,856 | $(986,615) | $648,861 |

ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

| | Nine Months Ended September 30, 2018 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Statement of Cash Flows | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Operating Activities | | | | | |
| Net Cash Provided By (Used For) Operating Activities | $222,097 | $ 176,851 | $ 1,622,248 | $ (900,209 ) | $ 1,120,987 |
| Investing Activities | | | | | |
| Purchases of fixed maturity investments | — | (214,449 ) | (25,229,184) | 605,716 | (24,837,917 ) |
| Purchases of equity securities | — | — | (819,342 ) | — | (819,342 ) |
| Purchases of other investments | — | — | (1,543,332 ) | — | (1,543,332 ) |
| Proceeds from the sales of fixed maturity investments | — | 111,533 | 23,804,386 | (605,716 ) | 23,310,203 |
| Proceeds from the sales of equity securities | — | — | 866,919 | — | 866,919 |
| Proceeds from the sales, redemptions and maturities of other investments | — | — | 1,178,035 | — | 1,178,035 |
| | — | — | 724,021 | — | 724,021 |

| | | | | | |
|---|---|---|---|---|---|
| Proceeds from redemptions and maturities of fixed maturity investments | | | | | |
| Net settlements of derivative instruments | — | — | 765 | — | 765 |
| Net (purchases) sales of short-term investments | 96,397 | (49,031) | 506,949 | — | 554,315 |
| Change in cash collateral related to securities lending | — | — | 137,073 | — | 137,073 |
| Contributions to subsidiaries | — | (2,500) | (29,646) | 32,146 | — |
| Purchases of fixed assets | (71) | — | (18,979) | — | (19,050) |
| Other | (4) | — | 58,231 | — | 58,227 |
| Net Cash Provided By (Used For) Investing Activities | 96,322 | (154,447) | (364,104) | 32,146 | (390,083) |
| Financing Activities | | | | | |
| Redemption of preferred shares | (92,555) | — | — | — | (92,555) |
| Purchases of common shares under share repurchase program | (184,529) | — | — | — | (184,529) |
| Proceeds from | (12,029) | — | 32,146 | (32,146) | (12,029) |

| | | | | | |
|---|---|---|---|---|---|
| common shares issued, net | | | | | |
| Proceeds from borrowings | — | — | 167,259 | — | 167,259 |
| Repayments of borrowings | — | — | (427,000) | — | (427,000) |
| Change in cash collateral related to securities lending | — | — | (137,073) | — | (137,073) |
| Dividends paid to redeemable noncontrolling interests | — | — | (14,447) | 956 | (13,491) |
| Dividends paid to parent (1) | — | — | (899,253) | 899,253 | — |
| Other | — | — | (6,084) | — | (6,084) |
| Preferred dividends paid | (31,242) | — | — | — | (31,242) |
| Net Cash Provided By (Used For) Financing Activities | (320,355) | — | (1,284,452) | 868,063 | (736,744) |
| Effects of exchange rates changes on foreign currency cash and restricted cash | — | — | (11,625) | — | (11,625) |
| Increase (decrease) in cash and restricted cash | (1,936) | 22,404 | (37,933) | — | (17,465) |
| Cash and restricted cash, beginning | 10,048 | 30,380 | 686,856 | — | 727,284 |

| | | | | | |
|---|---|---|---|---|---|
| of year | | | | | |
| Cash and restricted cash, end of period | $8,112 | $52,784 | $648,923 | $— | $709,819 |

(1) Dividends received by parent are included in net cash provided by (used for) operating activities.

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

| | Nine Months Ended September 30, 2017 | | | | |
|---|---|---|---|---|---|
| Condensed Consolidating Statement of Cash Flows | Arch Capital (Parent Guarantor) | Arch-U.S. (Subsidiary Issuer) | Other Arch Capital Subsidiaries | Consolidating Adjustments and Eliminations | Arch Capital Consolidated |
| Operating Activities | | | | | |
| Net Cash Provided By (Used For) Operating Activities | $130,715 | $ 70,761 | $1,444,276 | $ (585,043 ) | $ 1,060,709 |
| Investing Activities | | | | | |
| Purchases of fixed maturity investments | — | — | (28,079,129) | — | (28,079,129 ) |
| Purchases of equity securities | — | — | (667,135 ) | — | (667,135 ) |
| Purchases of other investments | — | — | (1,406,528 ) | — | (1,406,528 ) |
| Proceeds from the sales of fixed maturity investments | — | — | 27,629,474 | — | 27,629,474 |
| Proceeds from the sales of equity securities | — | — | 751,873 | — | 751,873 |
| Proceeds from the sales, redemptions and maturities of other investments | — | — | 938,581 | — | 938,581 |
| | — | — | 747,621 | — | 747,621 |

| | | | | | |
|---|---|---|---|---|---|
| Proceeds from redemptions and maturities of fixed maturity investments | | | | | |
| Net settlements of derivative instruments | — | — | (20,952) | — | (20,952) |
| Net (purchases) sales of short-term investments | 2,209 | (27,998) | (938,864) | — | (964,653) |
| Change in cash collateral related to securities lending | — | — | 148,692 | — | 148,692 |
| Contributions to subsidiaries | 20,641 | (72,900) | (353,588) | 405,847 | — |
| Issuance of intercompany loans | — | — | (47,000) | 47,000 | — |
| Repayment of intercompany loans | — | 47,000 | — | (47,000) | — |
| Acquisitions, net of cash | — | — | (27,709) | — | (27,709) |
| Purchases of fixed assets | (18) | — | (16,844) | — | (16,862) |
| Other | — | — | 114,730 | (20,641) | 94,089 |
| Net Cash Provided By (Used For) Investing Activities | 22,832 | (53,898) | (1,226,778) | 385,206 | (872,638) |
| Financing Activities | | | | | |
| Proceeds from issuance of | 222,054 | — | — | — | 222,054 |

| | | | | | |
|---|---|---|---|---|---|
| preferred shares, net | | | | | |
| Redemption of preferred shares | (230,000 ) | — | — | — | (230,000 ) |
| Proceeds from common shares issued, net | (7,484 ) | — | 405,847 | (405,847 ) | (7,484 ) |
| Proceeds from intercompany borrowings | — | — | 47,000 | (47,000 ) | — |
| Proceeds from borrowings | — | — | 238,915 | — | 238,915 |
| Repayments of intercompany borrowings | — | — | (47,000 ) | 47,000 | — |
| Repayments of borrowings | (100,000 ) | — | (72,000 ) | — | (172,000 ) |
| Change in cash collateral related to securities lending | — | — | (148,692 ) | — | (148,692 ) |
| Dividends paid to redeemable noncontrolling interests | — | — | (14,447 ) | 956 | (13,491 ) |
| Dividends paid to parent (1) | — | — | (584,087 ) | 584,087 | — |
| Other | — | — | (69,921 ) | 20,641 | (49,280 ) |
| Preferred dividends paid | (34,936 ) | — | — | — | (34,936 ) |
| Net Cash Provided By (Used For) Financing Activities | (150,366 ) | — | (244,385 ) | 199,837 | (194,914 ) |
| Effects of exchange | — | — | 17,888 | — | 17,888 |

| | | | | | |
|---|---|---|---|---|---|
| rates changes on foreign currency cash and restricted cash | | | | | |
| Increase (decrease) in cash and restricted cash | 3,181 | 16,863 | (8,999 ) | — | 11,045 |
| Cash and restricted cash, beginning of year | 1,738 | 71,955 | 895,876 | — | 969,569 |
| Cash and restricted cash, end of period | $4,919 | $ 88,818 | $886,877 | $— | $980,614 |

(1) Dividends received by parent are included in net cash provided by (used for) operating activities.

## 13. Income Taxes

The Company’s income tax provision on income before income taxes resulted in an expense of 10.5% for the nine months ended September 30, 2018, compared to an expense of 14.2% for the 2017 period. The Company’s effective tax rate, which is based upon the expected annual effective tax rate, may fluctuate from period to period based on the relative mix of income or loss reported by jurisdiction and the varying tax rates in each jurisdiction. For interim reporting purposes, the Company has calculated its effective tax rate for the full year of 2018 by treating any changes in assessment regarding the realizability of its deferred tax assets and excess tax benefits that arise from the accounting for stock based compensation as discrete items. As such, these amounts are not included when projecting the Company’s full year effective tax rate but rather is accounted for at the U.S. Federal statutory rate of 21% after applying the projected full year effective tax rate to actual results before the discrete item. The impact of the discrete items resulted in an expense of 0.3% for the nine months ended September 30, 2018.

On December 22, 2017, Staff Accounting Bulletin No. 118 (“SAB 118”) was issued to address the application of GAAP in situations when a registrant does not have the necessary information available, prepared or analyzed in reasonable detail to complete the accounting for certain income tax effects of the Tax Cuts and Jobs Act of 2017 (“Tax Cuts Act”). Pursuant to the guidance within SAB 118, the Company’s remeasurement of its deferred taxes at December 31, 2017 included certain provisional effects associated with enactment of the Tax Cuts Act for which measurement could be reasonably estimated. Provisional amounts may be adjusted in 2018 during the measurement period in accordance with SAB 118 when additional information is obtained. Additional information that may affect the provisional amounts would include, completion of the Company’s U.S. subsidiaries’ 2017 tax return filings, and potential future guidance from the IRS with respect to the transitional adjustment pertaining to loss reserve discounting as well as the utilization of alternative minimum tax credits. The Company’s income tax provision for the nine months ended September 30, 2018 does not include any adjustments to the provisional effects recorded at December 31, 2017.

The Company had a net deferred tax asset of $17.2 million at September 30, 2018, compared to $39.6 million at December 31, 2017. In addition, the Company recovered $34.0 million and paid $47.9 million of income taxes for the nine months ended September 30, 2018 and 2017, respectively.

## 14. 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 September 30, 2018, 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.

## 15. Subsequent Events

### Hurricane Michael

The Company estimates that its 2018 fourth quarter results will be negatively impacted by Hurricane Michael, which occurred in October 2018, in the range of $40 million to $60 million, net of reinsurance and reinstatement premiums. This pre-tax preliminary loss estimate is based on industry insured losses ranging from $7 billion to $10 billion. The Company’s preliminary estimate for Hurricane Michael is based on currently available information derived from modeling techniques, industry assessments of exposure, preliminary claims information obtained from the Company’s clients and brokers to date and a review of in-force contracts.

The Company’s actual losses from this event may vary materially from the estimates due to the inherent uncertainties in making such determinations resulting from several factors, including the preliminary nature of available information, the potential inaccuracies and inadequacies in the data provided by clients and brokers, 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, actual losses may increase if the Company’s reinsurers fail to meet their obligations to the Company or the reinsurance protections purchased by the Company are exhausted or are otherwise unavailable.

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Bellemeade

On October 22, 2018, Arch MI U.S. entered into an aggregate excess of loss reinsurance agreement with Bellemeade Re 2018-3 Ltd. (“Bellemeade 2018-3 Ltd.”), a special purpose reinsurance company domiciled in Bermuda. The agreement provides for up to $506.1 million in excess of $179.3 million of aggregate excess of loss reinsurance coverage at inception for new delinquencies on a portfolio of in-force policies primarily issued between January 1, 2018 and June 30, 2018. The coverage amount decreases over a ten-year period as the underlying covered mortgages amortize. Bellemeade 2018-3 Ltd. is funding its reinsurance obligations through the issuance of four classes of amortizing notes with ten-year legal final maturities.

In addition, Arch MI U.S. elected to terminate the agreement with Bellemeade 2016-1 Ltd. through an optional clean-up call event effective October 25, 2018.

Business Acquisitions

On November 1, 2018, the Company announced that its U.S. insurance operations entered into a definitive agreement to acquire McNeil & Co. (“McNeil”), a nationwide leader in specialized risk management and insurance programs headquartered in Cortland, New York. McNeil produced $153.7 million of premium for the Company in 2017. Post-acquisition, McNeil will support the Company’s insurance segment program product line. Approximately 140 employees will move to the Company as a result of the transaction. The transaction is expected to close in the 2018 fourth quarter and is subject to closing conditions, including regulatory approvals.

On November 1, 2018, the Company also announced that its U.K. insurance operations entered into a renewal rights transaction of a U.K. commercial lines book of business with The Ardonagh Group, consisting of commercial property, casualty, motor, professional liability, personal accident and travel business. The subject book of business generated approximately £150m of gross premiums written in 2017. Approximately 250 employees will move to the Company as a result of the transaction. The transaction is expected to close in the 2019 first quarter.

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## ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is a discussion and analysis of our financial condition and results of operations. This should be read in conjunction with our consolidated financial statements included in Item 1 of this report and also our Management's Discussion and Analysis of Financial Condition and Results of Operations contained in our Annual Report on Form 10-K for the year ended December 31, 2017 ("2017 Form 10-K"). In addition, readers should review "Risk Factors" set forth in Item 1A of Part I of our 2017 Form 10-K. Tabular amounts are in U.S. Dollars in thousands, except share amounts, unless otherwise noted.

Arch Capital Group Ltd. ("Arch Capital" and, together with its subsidiaries, "we" or "us") is a Bermuda public limited liability company with approximately $11.21 billion in capital at September 30, 2018 and, through operations in Bermuda, the United States, Europe, Canada and Australia, writes insurance, reinsurance and mortgage insurance on a worldwide basis.

## CURRENT OUTLOOK

Our objective is to achieve an average operating return on average equity of 15% or greater over the insurance cycle, 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.

The broad property casualty insurance market environment continues to be competitive, with only a few specialty areas providing opportunities to deploy capital at returns which meet our risk-adjusted return requirements. In most of our insurance lines of business, rate increases appear to be in excess of loss cost trends. However, the spread between rate changes and loss trend is a key variable in assessing expected returns and, in specialty lines, is volatile by nature. Our underwriting teams continue to execute a disciplined strategy by emphasizing small and medium-sized accounts over large accounts, shrinking premiums in more commoditized lines such as general liability and directors and officers, and by utilizing reinsurance purchases to reduce volatility on large account, high capacity business. Writings in property catastrophe-exposed business continued to remain low in the 2018 third quarter.

Our mortgage segment continues to experience generally favorable market conditions, with pricing in the U.S. appearing to have stabilized in the 2018 third quarter, after the rate changes

announced in the first half of 2018. Our results continue to reflect our success in making high quality credit underwriting risk decisions and building customer relationships.

Arch remains committed to providing solutions across many offerings as the marketplace evolves, including new mortgage credit risk transfer programs initiated by government sponsored enterprises, or "GSEs," in 2018. Such programs have begun generating business with banks developing new systems to handle the programs and momentum beginning to build. In addition, we completed two additional Bellemeade risk transfers to the capital markets in August and October, increasing our protection for mortgage tail risk.

## FINANCIAL MEASURES

Management uses the following three key financial indicators in evaluating our performance and measuring the overall growth in value generated for Arch Capital'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 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 Arch Capital'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 $21.15 at September 30, 2018, compared to $20.68 at June 30, 2018 and $19.87 at September 30, 2017. The 2.3% increase for the 2018 third quarter and 6.4% increase over the trailing twelve months reflected strong underwriting results, partially offset by the impact of an increase in interest rates on our fixed income securities in the period.

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 the average of beginning and ending common shareholders' equity available to Arch during the period. After-tax operating income available to Arch common shareholders, a non-GAAP financial measure as defined in Regulation G, represents net income available to Arch common shareholders, excluding net realized

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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, transaction costs and other, loss on redemption of preferred shares and income taxes. Management uses Operating ROAE as a key measure of the return generated to common shareholders. See “Comment on Non-GAAP Financial Measures.”

Our Operating ROAE was 11.4% for the 2018 third quarter, compared to (5.3)% for the 2017 third quarter, and 11.4% for the nine months ended September 30, 2018, compared to 4.4% for the 2017 period. The 2018 returns reflected strong mortgage insurance underwriting performance and a low level of catastrophic activity, while the 2017 returns reflected the higher level of catastrophic activity.

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, 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. The following table summarizes our total return compared to the benchmark return against which we measured our portfolio during the periods. See “Comment on Non-GAAP Financial Measures.”

| | Arch Portfolio | Benchmark Return |
|---|---|---|
| 2018 Third Quarter | 0.31 % | 0.36 % |
| 2017 Third Quarter | 1.60 % | 1.24 % |
| | | |
| Nine Months Ended September 30, 2018 | (0.19 )% | (0.46 )% |
| Nine Months Ended September 30, 2017 | 5.05 % | 4.33 % |

Excluding the effects of foreign exchange, total return was 0.37% for the 2018 third quarter and 0.29% for the nine months ended September 30, 2018. Total return for the 2018 periods reflected the impact of rising interest rates, which dampened the total return on our investment grade fixed income portfolio, and low returns on equities.

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 September 30, 2018, the benchmark return index had an average credit quality of “Aa2” by Moody’s Investors Service (“Moody’s”), and an estimated duration of 3.26 years.

The benchmark return index included weightings to the following indices:

| | % |
|---|---|
| ICE BoAML 1-10 Year U.S. Corporate & All Yankees, A - AAA Rated Index | 20.00 % |
| ICE BoAML 1-5 Year U.S. Treasury Index | 15.00 |
| ICE BoAML 1-10 Year U.S. Municipal Securities Index | 14.50 |
| ICE BoAML 3-5 Year Fixed Rate Asset Backed Securities Index | 7.00 |
| Bloomberg Barclays CMBS Invest Grade Aaa Total Return Index | 5.00 |
| MSCI ACWI Net Total Return USD Index | 5.00 |
| ICE BoAML German Government 1-10 Year Index | 5.00 |
| ICE BoAML U.S. Mortgage Backed Securities Index | 4.00 |
| Hedge Fund Research HFRX Fixed Income Credit Index | 3.50 |
| Hedge Fund Research HFRX Equal Weighted Strategies | 3.50 |

| | |
|---|---|
| ICE BoAML 5-10 Year U.S. Treasury Index | 3.00 |
| ICE BoAML 1-5 Year U.K. Gilt Index | 3.00 |
| ICE BoAML U.S. High Yield Constrained Index | 2.50 |
| ICE BoAML 1-5 Year Australian Governments Index | 2.50 |
| S&P Leveraged Loan Total Return Index | 2.50 |
| ICE BoAML 0-3 Month U.S. Treasury Bill Index | 2.00 |
| ICE BoAML 1-5 Year Canada Government Index | 1.50 |
| ICE 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, transaction costs and other, loss on redemption of preferred shares 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

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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, transaction costs and other and loss on redemption of preferred shares 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.

Transaction costs and other include advisory, financing, legal, severance, incentive compensation and other transaction costs related to the acquisition of United Guaranty Corporation, a North Carolina corporation ("UGC") which closed at the end of 2016. We believe that transaction costs and other, due to their non-recurring nature, are not indicative of the performance of, or trends in, our business performance. The loss on redemption of preferred shares related to the redemption of our Series C preferred shares in January 2018 and had no impact on shareholders' equity or cash flows. 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, transaction costs and other and loss on redemption of preferred shares 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 4, "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 4, "Segment Information" to 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 intangibles 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

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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 or loss available to Arch common shareholders to after-tax operating income or loss available to Arch common shareholders. Each line item reflects the impact of our approximate 11% ownership of Watford Re’s common equity.

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Net income (loss) available to Arch common shareholders | $217,006 | $(52,760) | $587,525 | $362,967 |
| Net realized (gains) losses | 47,528 | (64,344) | 220,718 | (111,930) |
| Net impairment losses recognized in earnings | 492 | 1,878 | 1,124 | 5,415 |
| Equity in net (income) loss of investment funds accounted for using the equity method | (15,982) | (31,090) | (52,523) | (111,884) |
| Net foreign exchange (gains) losses | (7,539) | 27,811 | (39,021) | 85,619 |
| Transaction costs and other | 1,091 | 2,990 | 8,829 | 21,249 |
| Loss on redemption of preferred shares | — | 6,735 | 2,710 | 6,735 |
| Income tax expense (benefit) (1) | (316) | 1,647 | (9,343) | 1,580 |
| After-tax operating income (loss) available to Arch common shareholders | $242,280 | $(107,133) | $720,019 | $259,751 |
| | | | | |
| Beginning common shareholders’ equity | $8,383,755 | $8,126,332 | $8,324,047 | $7,481,163 |
| Ending common shareholders’ equity | 8,575,148 | 8,138,589 | 8,575,148 | 8,138,589 |
| Average common shareholders’ equity | $8,479,452 | $8,132,461 | $8,449,598 | $7,809,876 |

| | | | | |
|---|---|---|---|---|
| Annualized return on average common equity % | 10.2 | (2.6 ) | 9.3 | 6.2 |
| Annualized operating return on average common equity % | 11.4 | (5.3 ) | 11.4 | 4.4 |

(1) Income tax on 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, transaction costs and other and loss on redemption of preferred shares reflects the relative mix reported by jurisdiction and the varying tax rates in each jurisdiction.

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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 President and Chief Executive Officer of Arch Capital and the Chief Financial Officer of Arch Capital. 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 tables set forth our insurance segment's underwriting results:

| | Three Months Ended September 30, | | |
|---|---|---|---|
| | 2018 | 2017 | % Change |
| Gross premiums written | $836,820 | $787,447 | 6.3 |
| Premiums ceded | (259,968) | (222,516) | |
| Net premiums written | 576,852 | 564,931 | 2.1 |
| Change in unearned premiums | (15,794) | (29,766) | |
| Net premiums earned | 561,058 | 535,165 | 4.8 |
| Losses and loss adjustment expenses | (409,435) | (568,795) | |
| Acquisition expenses | (88,255) | (82,638) | |
| Other operating expenses | (90,081) | (90,875) | |
| Underwriting income (loss) | $(26,713) | $(207,143) | n/m |

| Underwriting Ratios | | | % Point Change |
|---|---|---|---|
| Loss ratio | 73.0 % | 106.3 % | (33.3) |
| Acquisition expense ratio | 15.7 % | 15.4 % | 0.3 |
| Other operating expense ratio | 16.1 % | 17.0 % | (0.9) |
| Combined ratio | 104.8 % | 138.7 % | (33.9) |

| | Nine Months Ended September 30, | | |
|---|---|---|---|
| | 2018 | 2017 | % Change |
| Gross premiums written | $2,429,570 | $2,313,630 | 5.0 |
| Premiums ceded | (752,413) | (704,057) | |
| Net premiums written | 1,677,157 | 1,609,573 | 4.2 |
| Change in unearned premiums | (30,913) | (51,188) | |
| Net premiums earned | 1,646,244 | 1,558,385 | 5.6 |
| Losses and loss adjustment expenses | (1,120,630) | (1,252,375) | |
| Acquisition expenses | (264,094) | (236,378) | |
| Other operating expenses | (274,735) | (271,268) | |
| Underwriting income (loss) | $(13,215) | $(201,636) | n/m |

| Underwriting Ratios | | | % Point Change |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Loss ratio | 68.1 % | 80.4 % | (12.3 ) |
| Acquisition expense ratio | 16.0 % | 15.2 % | 0.8 |
| Other operating expense ratio | 16.7 % | 17.4 % | (0.7 ) |
| Combined ratio | 100.8 % | 113.0 % | (12.2 ) |

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

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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 1,000 companies and smaller transaction business programs.
Premiums Written.
The following tables set forth our insurance segment's net premiums written by major line of business:

| | Three Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Professional lines | $113,100 | 19.6 | $120,509 | 21.3 |
| Programs | 103,928 | 18.0 | 109,805 | 19.4 |
| Construction and national accounts | 71,888 | 12.5 | 66,053 | 11.7 |
| Travel, accident and health | 79,450 | 13.8 | 71,386 | 12.6 |
| Property, energy, marine and aviation | 60,909 | 10.6 | 48,396 | 8.6 |
| Excess and surplus casualty | 44,829 | 7.8 | 43,853 | 7.8 |
| Lenders products | 25,995 | 4.5 | 25,732 | 4.6 |
| Other | 76,753 | 13.3 | 79,197 | 14.0 |
| Total | $576,852 | 100.0 | $564,931 | 100.0 |

2018 Third Quarter versus 2017 Third Quarter. Gross premiums written by the insurance segment in the 2018 third quarter were 6.3% higher than in the 2017 third quarter, while net premiums written were 2.1% higher than in the 2017 third quarter. The increase in net premiums written reflected growth in travel insurance, due to both new business and growth in existing accounts, and in property, primarily due to new business and rate increases.

| | Nine Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Professional lines | $341,187 | 20.3 | $339,761 | 21.1 |
| Programs | 300,662 | 17.9 | 303,190 | 18.8 |
| Construction and national accounts | 236,700 | 14.1 | 239,504 | 14.9 |
| Travel, accident and health | 223,196 | 13.3 | 189,604 | 11.8 |
| Property, energy, marine and aviation | 175,157 | 10.4 | 134,531 | 8.4 |
| Excess and surplus casualty | 126,793 | 7.6 | 134,907 | 8.4 |
| Lenders products | 70,269 | 4.2 | 71,896 | 4.5 |
| Other | 203,193 | 12.1 | 196,180 | 12.2 |
| Total | $1,677,157 | 100.0 | $1,609,573 | 100.0 |

Nine Months Ended September 30, 2018 versus 2017 period. Gross premiums written by the insurance segment for the nine months ended September 30, 2018 were 5.0% higher than in the 2017 period, while net premiums written were 4.2% higher than in the 2017 period. The increase in net premiums written reflected growth in travel, due to both new business and growth in existing accounts, and in property, primarily due to new business and rate increases.
Net Premiums Earned.

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

| | Three Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Professional lines | $115,271 | 20.5 | $113,146 | 21.1 |
| Programs | 96,509 | 17.2 | 94,353 | 17.6 |
| Construction and national accounts | 80,381 | 14.3 | 77,779 | 14.5 |
| Travel, accident and health | 81,405 | 14.5 | 66,136 | 12.4 |
| Property, energy, marine and aviation | 53,857 | 9.6 | 46,906 | 8.8 |
| Excess and surplus casualty | 43,401 | 7.7 | 47,852 | 8.9 |
| Lenders products | 24,254 | 4.3 | 23,499 | 4.4 |
| Other | 65,980 | 11.8 | 65,494 | 12.2 |
| Total | $561,058 | 100.0 | $535,165 | 100.0 |

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| | Nine Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Professional lines | $343,515 | 20.9 | $330,159 | 21.2 |
| Programs | 288,853 | 17.5 | 267,115 | 17.1 |
| Construction and national accounts | 239,377 | 14.5 | 236,050 | 15.1 |
| Travel, accident and health | 222,994 | 13.5 | 188,053 | 12.1 |
| Property, energy, marine and aviation | 153,300 | 9.3 | 126,407 | 8.1 |
| Excess and surplus casualty | 129,994 | 7.9 | 147,709 | 9.5 |
| Lenders products | 70,231 | 4.3 | 72,160 | 4.6 |
| Other | 197,980 | 12.0 | 190,732 | 12.2 |
| Total | $1,646,244 | 100.0 | $1,558,385 | 100.0 |

Net premiums written are primarily earned on a pro rata basis over the terms of the policies for all products, usually 12 months. Net premiums earned reflect changes in net premiums written over the previous five quarters. Net premiums earned in the 2018 third quarter were 4.8% higher than in the 2017 third quarter. Net premiums earned for the nine months ended September 30, 2018 were 5.6% higher than in the 2017 period.

Losses and Loss Adjustment Expenses.

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

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | September 30, | | September 30, | |
| | 2018 | 2017 | 2018 | 2017 |
| Current year | 74.1 % | 106.9 % | 69.0 % | 80.9 % |
| Prior period reserve development | (1.1 )% | (0.6 )% | (0.9 )% | (0.5 )% |
| Loss ratio | 73.0 % | 106.3 % | 68.1 % | 80.4 % |

Current Year Loss Ratio.

The insurance segment's current year loss ratio in the 2018 third quarter was 32.8 points lower than in the 2017 third quarter and reflected 5.8 points of current year catastrophic activity, primarily related to Hurricane Florence, compared to 40.1 points in the 2017 third quarter, primarily related to Hurricanes Harvey, Irma and Maria. The insurance segment's current year loss ratio for the nine months ended September 30, 2018 was 11.9 points lower than in the 2017 period and reflected 2.5 points of current year catastrophic activity, compared to 14.5 points in the 2017 period. The balance of the change in the 2018 loss ratios resulted, in part, from changes in mix of business and the level of large attritional losses.

Prior Period Reserve Development.

The insurance segment's net favorable development was $5.9 million, or 1.1 points, for the 2018 third quarter, compared to $3.0 million, or 0.6 points, for the 2017 third quarter, and $14.1 million, or 0.9 points, for the nine months ended September 30,

2018, compared to $7.2 million, or 0.5 points, for the 2017 period. See note 5, "Reserve for Losses and Loss Adjustment Expenses," to our consolidated financial statements for information about the insurance segment's prior year reserve development.

Underwriting Expenses.

2018 Third Quarter versus 2017 Third Quarter. The insurance segment's underwriting expense ratio was 31.8% in the 2018 third quarter, compared to 32.4% in the 2017 third quarter. The comparison of the underwriting expense ratios reflects changes in the level of reinsurance ceded on a quota share basis and changes in the mix of business.

Nine Months Ended September 30, 2018 versus 2017 period. The insurance segment's underwriting expense ratio was 32.7% for the nine months ended September 30, 2018, compared to 32.6% for the 2017 period.

Reinsurance Segment

The following tables set forth our reinsurance segment's underwriting results:

| | Three Months Ended September 30, | | |
|---|---|---|---|
| | 2018 | 2017 | % Change |
| Gross premiums written | $435,396 | $422,083 | 3.2 |
| Premiums ceded | (123,705 ) | (105,389 ) | |
| Net premiums written | 311,691 | 316,694 | (1.6 ) |
| Change in unearned premiums | (18,418 ) | 6,879 | |
| Net premiums earned | 293,273 | 323,573 | (9.4 ) |
| Other underwriting income | 1,387 | 1,728 | |
| Losses and loss adjustment expenses | (183,413 ) | (318,609 ) | |
| Acquisition expenses | (50,367 ) | (57,340 ) | |
| Other operating expenses | (29,936 ) | (36,214 ) | |
| Underwriting income (loss) | $30,944 | $(86,862 ) | n/m |

| Underwriting Ratios | | | % Point Change |
|---|---|---|---|
| Loss ratio | 62.5 % | 98.5 % | (36.0 ) |
| Acquisition expense ratio | 17.2 % | 17.7 % | (0.5 ) |
| Other operating expense ratio | 10.2 % | 11.2 % | (1.0 ) |
| Combined ratio | 89.9 % | 127.4 % | (37.5 ) |

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| | Nine Months Ended September 30, | | |
|---|---|---|---|
| | 2018 | 2017 | % Change |
| Gross premiums written | $1,503,206 | $1,351,051 | 11.3 |
| Premiums ceded | (455,682) | (386,743) | |
| Net premiums written | 1,047,524 | 964,308 | 8.6 |
| Change in unearned premiums | (134,761) | (81,182) | |
| Net premiums earned | 912,763 | 883,126 | 3.4 |
| Other underwriting income | 2,490 | 1,143 | |
| Losses and loss adjustment expenses | (555,044) | (631,669) | |
| Acquisition expenses | (148,828) | (154,638) | |
| Other operating expenses | (101,185) | (110,458) | |
| Underwriting income (loss) | $110,196 | $(12,496) | n/m |
| | | | |
| Underwriting Ratios | | | % Point Change |
| Loss ratio | 60.8 % | 71.5 % | (10.7) |
| Acquisition expense ratio | 16.3 % | 17.5 % | (1.2) |
| Other operating expense ratio | 11.1 % | 12.5 % | (1.4) |
| Combined ratio | 88.2 % | 101.5 % | (13.3) |

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 tables set forth our reinsurance segment's net premiums written by major line of business:

| Three Months Ended September 30, | | | |
|---|---|---|---|
| 2018 | | 2017 | |
| Amount | % | Amount | % |

| | | | | |
|---|---|---|---|---|
| Other specialty | $105,535 | 33.9 | $101,400 | 32.0 |
| Casualty | 98,788 | 31.7 | 113,446 | 35.8 |
| Property excluding property catastrophe | 83,222 | 26.7 | 63,943 | 20.2 |
| Property catastrophe | 9,053 | 2.9 | 28,123 | 8.9 |
| Marine and aviation | 6,011 | 1.9 | 2,037 | 0.6 |
| Other | 9,082 | 2.9 | 7,745 | 2.4 |
| Total | $311,691 | 100.0 | $316,694 | 100.0 |
| | | | | |
| Pro rata | $197,431 | 63.3 | $206,948 | 65.3 |
| Excess of loss | 114,260 | 36.7 | 109,746 | 34.7 |
| Total | $311,691 | 100.0 | $316,694 | 100.0 |

2018 Third Quarter versus 2017 Third Quarter. Gross premiums written by the reinsurance segment in the 2018 third quarter were 3.2% higher than in the 2017 third quarter, while net premiums written were 1.6% lower than in the 2017 third quarter. The lower change in net premiums written primarily reflects an increase in retrocessions on other specialty and casualty lines. Net premiums written for the 2018 third quarter reflected declines in property catastrophe and casualty lines, partially offset by growth in property excluding property catastrophe business, primarily due to new accounts. The reduction in property catastrophe net premiums written primarily related to a lower level of reinstatement premiums, as the 2017 third quarter included $15.8 million related to Hurricanes Harvey, Irma and Maria. The decline in casualty net premiums written was mostly due to the one-time impact of a retroactive reinsurance contract of $45.4 million recorded in the 2017 third quarter, which was substantially earned in that period with a corresponding increase in losses and loss adjustment expenses. A portion of the premium reduction in this line was offset by new business opportunities in the 2018 third quarter.

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| | Nine Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Other specialty | $399,608 | 38.1 | $371,146 | 38.5 |
| Casualty | 297,077 | 28.4 | 287,120 | 29.8 |
| Property excluding property catastrophe | 246,268 | 23.5 | 208,445 | 21.6 |
| Property catastrophe | 51,730 | 4.9 | 57,773 | 6.0 |
| Marine and aviation | 26,084 | 2.5 | 20,510 | 2.1 |
| Other | 26,757 | 2.6 | 19,314 | 2.0 |
| Total | $1,047,524 | 100.0 | $964,308 | 100.0 |
| | | | | |
| Pro rata | $562,454 | 53.7 | $536,857 | 55.7 |
| Excess of loss | 485,070 | 46.3 | 427,451 | 44.3 |
| Total | $1,047,524 | 100.0 | $964,308 | 100.0 |

Nine Months Ended September 30, 2018 versus 2017 period. Gross premiums written by the reinsurance segment for the nine months ended September 30, 2018 were 11.3% higher than in the 2017 period, while net premiums written were 8.6% higher than in the 2017 period. The increase in net premiums written reflected growth in property lines, primarily due to new business and rate increases, and in other specialty, primarily due to new international motor contracts, partially offset by a decline in property catastrophe. The reduction in property catastrophe net premiums written primarily related to a lower level of reinstatement premiums, as the 2017 period included $15.8 million related to Hurricanes Harvey, Irma and Maria.

Net Premiums Earned.

The following tables set forth our reinsurance segment’s net premiums earned by major line of business:

| | Three Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Other specialty | $108,311 | 36.9 | $96,090 | 29.7 |
| Casualty | 77,496 | 26.4 | 117,255 | 36.2 |
| Property excluding property catastrophe | 71,358 | 24.3 | 65,049 | 20.1 |
| Property catastrophe | 18,190 | 6.2 | 30,039 | 9.3 |
| Marine and aviation | 8,672 | 3.0 | 6,801 | 2.1 |
| Other | 9,246 | 3.2 | 8,339 | 2.6 |
| Total | $293,273 | 100.0 | $323,573 | 100.0 |
| | | | | |
| Pro rata | $168,865 | 57.6 | $188,874 | 58.4 |
| Excess of loss | 124,408 | 42.4 | 134,699 | 41.6 |
| Total | $293,273 | 100.0 | $323,573 | 100.0 |

| | Nine Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Other specialty | $361,676 | 39.6 | $307,620 | 34.8 |
| Casualty | 231,877 | 25.4 | 270,126 | 30.6 |
| Property excluding property catastrophe | 210,961 | 23.1 | 197,785 | 22.4 |
| Property catastrophe | 52,293 | 5.7 | 61,975 | 7.0 |
| Marine and aviation | 28,150 | 3.1 | 26,277 | 3.0 |
| Other | 27,806 | 3.0 | 19,343 | 2.2 |

| | | | | |
|---|---|---|---|---|
| Total | $912,763 | 100.0 | $883,126 | 100.0 |
| | | | | |
| Pro rata | $536,493 | 58.8 | $503,954 | 57.1 |
| Excess of loss | 376,270 | 41.2 | 379,172 | 42.9 |
| Total | $912,763 | 100.0 | $883,126 | 100.0 |

Net 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. For the 2018 third quarter, net premiums earned were 9.4% lower than in the 2017 third quarter. The reduction was primarily due to the retroactive reinsurance contract and reinstatement premium impacts discussed above, as well as changes in net premiums written over the previous five quarters. For the nine months ended September 30, 2018, net premiums earned were 3.4% higher than in the 2017 period, and reflect changes in net premiums written over the previous five quarters.

Other Underwriting Income (Loss).

Other underwriting income (loss) for the 2018 third quarter was $1.4 million, compared to $1.7 million for the 2017 third quarter, and $2.5 million for the nine months ended September 30, 2018, compared to $1.1 million for the 2017 period.

Losses and Loss Adjustment Expenses.

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

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | September 30, | | September 30, | |
| | 2018 | 2017 | 2018 | 2017 |
| Current year | 74.2 % | 109.8 % | 72.2 % | 86.6 % |
| Prior period reserve development | (11.7 )% | (11.3 )% | (11.4)% | (15.1)% |
| Loss ratio | 62.5 % | 98.5 % | 60.8 % | 71.5 % |

Current Year Loss Ratio.

The reinsurance segment’s current year loss ratio in the 2018 third quarter was 35.6 points lower than in the 2017 third quarter and reflected 9.5 points of current year catastrophic activity, primarily related to Hurricane Florence and Typhoon Jebi, compared to 46.3 points in the 2017 third quarter, primarily related to Hurricanes Harvey, Irma and Maria.

The reinsurance segment’s current year loss ratio for the nine months ended September 30, 2018 was 14.4 points lower than

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in the 2017 period and reflected 4.0 points of current year catastrophic activity, compared to 20.0 points in the 2017 period.

Prior Period Reserve Development.

The reinsurance segment's net favorable development was $34.3 million, or 11.7 points, for the 2018 third quarter, compared to $36.5 million, or 11.3 points, for the 2017 third quarter, and $103.9 million, or 11.4 points, for the nine months ended September 30, 2018, compared to $133.3 million, or 15.1 points, for the 2017 period. See note 5, "Reserve for Losses and Loss Adjustment Expenses," to our consolidated financial statements for information about the reinsurance segment's prior year reserve development.

Underwriting Expenses.

2018 Third Quarter versus 2017 Third Quarter. The underwriting expense ratio for the reinsurance segment was 27.4% in the 2018 third quarter, compared to 28.9% in the 2017 third quarter, reflecting the non-renewal of certain reinsurance agreements between our U.S.-based insurance and reinsurance subsidiaries and Arch Reinsurance Ltd. ("Arch Re Bermuda") were canceled on a cutoff basis as of January 1, 2018, which reduced federal excise taxes incurred by $2.3 million, or 0.8 points, and changes in the mix and type of business.

Nine Months Ended September 30, 2018 versus 2017 period. The underwriting expense ratio for the reinsurance segment was 27.4% for the nine months ended September 30, 2018, compared to 30.0% for the 2017 period. The comparison of the underwriting expense ratios also reflected changes in the mix and type of business and a higher level of net premiums earned for the 2018 period. The underwriting expense ratio benefited from a reduction in federal excise taxes incurred of $6.9 million, or 0.8 points, as discussed above.

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 and United Guaranty Residential Insurance Company (together, "Arch MI U.S."), 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 in Hong Kong by Arch MI Asia; and various GSE credit risk sharing products provided primarily by Arch Re Bermuda.

The following tables set forth our mortgage segment's underwriting results.

| | Three Months Ended September 30, | | |
|---|---|---|---|
| | 2018 | 2017 | % Change |
| Gross premiums written | $350,559 | $347,951 | 0.7 |
| Premiums ceded | (57,226) | (57,900) | |
| Net premiums written | 293,333 | 290,051 | 1.1 |
| Change in unearned premiums | 7,591 | (15,533) | |
| Net premiums earned | 300,924 | 274,518 | 9.6 |
| Other underwriting income | 3,733 | 3,599 | |
| Losses and loss adjustment expenses | (9,615) | (35,156) | |
| Acquisition expenses | (33,361) | (21,803) | |
| Other operating expenses | (31,122) | (34,770) | |
| Underwriting income | $230,559 | $186,388 | 23.7 |
| | | | |
| Underwriting Ratios | | | % Point Change |
| Loss ratio | 3.2 % | 12.8 % | (9.6) |
| Acquisition expense ratio | 11.1 % | 7.9 % | 3.2 |
| Other operating expense ratio | 10.3 % | 12.7 % | (2.4) |
| Combined ratio | 24.6 % | 33.4 % | (8.8) |

Nine Months Ended September 30,

| | 2018 | 2017 | % Change |
|---|---|---|---|
| Gross premiums written | $1,002,727 | $1,032,800 | (2.9 ) |
| Premiums ceded | (154,230 ) | (194,139 ) | |
| Net premiums written | 848,497 | 838,661 | 1.2 |
| Change in unearned premiums | 23,147 | (61,776 ) | |
| Net premiums earned | 871,644 | 776,885 | 12.2 |
| Other underwriting income | 10,464 | 11,999 | |
| Losses and loss adjustment expenses | (74,672 ) | (84,915 ) | |
| Acquisition expenses | (87,665 ) | (76,235 ) | |
| Other operating expenses | (108,622 ) | (108,790 ) | |
| Underwriting income | $611,149 | $518,944 | 17.8 |

| Underwriting Ratios | | | % Point Change |
|---|---|---|---|
| Loss ratio | 8.6 % | 10.9 % | (2.3 ) |
| Acquisition expense ratio | 10.1 % | 9.8 % | 0.3 |
| Other operating expense ratio | 12.5 % | 14.0 % | (1.5 ) |
| Combined ratio | 31.2 % | 34.7 % | (3.5 ) |

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

| | Three Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Client location: | | | | |
| United States | $267,234 | 91.1 | $262,028 | 90.3 |
| Other | 26,099 | 8.9 | 28,023 | 9.7 |
| Total | $293,333 | 100.0 | $290,051 | 100.0 |
| | | | | |
| Underwriting location: | | | | |
| United States | $240,959 | 82.1 | $235,447 | 81.2 |
| Other | 52,374 | 17.9 | 54,604 | 18.8 |
| Total | $293,333 | 100.0 | $290,051 | 100.0 |

2018 Third Quarter versus 2017 Third Quarter. Gross premiums written by the mortgage segment in the 2018 third quarter were 0.7% higher than in the 2017 third quarter. The growth in gross premiums written primarily reflected an increase in U.S. monthly premium business and GSE credit-risk sharing transactions, partially offset by a lower level of U.S. single premium business and a decrease in Australian mortgage reinsurance business. Net premiums written for the 2018 third quarter were 1.1% higher than in the 2017 third quarter and reflected a higher level of ceded premiums related to the new Bellemeade transaction in the 2018 third quarter, while the 2017 third quarter reflected higher retrocessions of Australian mortgage reinsurance business.

| | Nine Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Client location: | | | | |
| United States | $768,748 | 90.6 | $756,620 | 90.2 |
| Other | 79,749 | 9.4 | 82,041 | 9.8 |
| Total | $848,497 | 100.0 | $838,661 | 100.0 |
| | | | | |
| Underwriting location: | | | | |
| United States | $691,851 | 81.5 | $679,442 | 81.0 |
| Other | 156,646 | 18.5 | 159,219 | 19.0 |
| Total | $848,497 | 100.0 | $838,661 | 100.0 |

Nine Months Ended September 30, 2018 versus 2017 period. Gross premiums written by the mortgage segment for the nine months ended September 30, 2018 were 2.9% lower than in the 2017 period. The reduction in gross premiums written primarily reflected a lower level of Australian mortgage reinsurance business and a lower level of U.S. single premium business. Net premiums written for the nine months ended September 30, 2018 were 1.2% higher than in the 2017 period and reflected a higher level of ceded premiums related to new Bellemeade transactions, while the 2017 period also reflected higher retrocessions of Australian mortgage reinsurance business.

The persistency rate, which 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, of the Arch MI U.S. portfolio of mortgage loans was 82.0% at September 30, 2018, compared to 81.8% at December 31, 2017.
Arch MI U.S. generated $21.4 billion of new insurance written ("NIW") in the 2018 third quarter, compared to $17.7 billion in the 2017 third quarter, as a higher level of purchase market activity more than offset a reduction in single premium business. NIW represents the original principal balance of all loans that received coverage during the period.

Monthly premium policies contributed 92.6% of NIW in the 2018 third quarter, compared to 87.0% for the 2017 third quarter.

The following tables provide details on the NIW generated by Arch MI U.S.:

| (U.S. Dollars in millions) | Three Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Total new insurance written (NIW) (1) | $21,425 | | $17,683 | |
| | | | | |
| Credit quality (FICO): | | | | |
| >=740 | $12,013 | 56.1 | $10,063 | 56.9 |
| 680-739 | 7,728 | 36.1 | 6,357 | 35.9 |
| 620-679 | 1,684 | 7.9 | 1,263 | 7.1 |
| Total | $21,425 | 100.0 | $17,683 | 100.0 |
| | | | | |
| Loan-to-value (LTV): | | | | |
| 95.01% and above | $3,231 | 15.1 | $1,757 | 9.9 |
| 90.01% to 95.00% | 9,689 | 45.2 | 8,406 | 47.5 |
| 85.01% to 90.00% | 6,264 | 29.2 | 5,668 | 32.1 |
| 85.01% and below | 2,241 | 10.5 | 1,852 | 10.5 |
| Total | $21,425 | 100.0 | $17,683 | 100.0 |
| | | | | |
| Monthly vs. single: | | | | |
| Monthly | $19,842 | 92.6 | $15,392 | 87.0 |
| Single | 1,583 | 7.4 | 2,291 | 13.0 |
| Total | $21,425 | 100.0 | $17,683 | 100.0 |
| | | | | |
| Purchase vs. refinance: | | | | |
| Purchase | $20,397 | 95.2 | $16,460 | 93.1 |
| Refinance | 1,028 | 4.8 | 1,223 | 6.9 |
| Total | $21,425 | 100.0 | $17,683 | 100.0 |

(1) Represents the original principal balance of all loans that received coverage during the period.

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| (U.S. Dollars in millions) | Nine Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Total new insurance written (NIW) (1) | $52,742 | | $47,646 | |
| | | | | |
| Credit quality (FICO): | | | | |
| >=740 | $29,933 | 56.8 | $27,061 | 56.8 |
| 680-739 | 18,952 | 35.9 | 17,246 | 36.2 |
| 620-679 | 3,857 | 7.3 | 3,339 | 7.0 |
| Total | $52,742 | 100.0 | $47,646 | 100.0 |
| | | | | |
| Loan-to-value (LTV): | | | | |
| 95.01% and above | $7,328 | 13.9 | $4,429 | 9.3 |
| 90.01% to 95.00% | 24,030 | 45.6 | 22,763 | 47.8 |
| 85.01% to 90.00% | 15,817 | 30.0 | 15,191 | 31.9 |
| 85.01% and below | 5,567 | 10.6 | 5,263 | 11.0 |
| Total | $52,742 | 100.0 | $47,646 | 100.0 |
| | | | | |
| Monthly vs. single: | | | | |
| Monthly | $49,046 | 93.0 | $40,592 | 85.2 |
| Single | 3,696 | 7.0 | 7,054 | 14.8 |
| Total | $52,742 | 100.0 | $47,646 | 100.0 |
| | | | | |
| Purchase vs. refinance: | | | | |
| Purchase | $49,556 | 94.0 | $43,243 | 90.8 |
| Refinance | 3,186 | 6.0 | 4,403 | 9.2 |
| Total | $52,742 | 100.0 | $47,646 | 100.0 |

(1) Represents the original principal balance of all loans that received coverage during the period.

Net Premiums Earned.

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

| | Three Months Ended September 30, | | | |
|---|---|---|---|---|
| | 2018 | | 2017 | |
| | Amount | % | Amount | % |
| Client Location: | | | | |
| United States | $284,110 | 94.4 | $262,324 | 95.6 |
| Other | 16,814 | 5.6 | 12,194 | 4.4 |
| Total | $300,924 | 100.0 | $274,518 | 100.0 |
| | | | | |
| Underwriting location: | | | | |
| United States | $256,231 | 85.1 | $233,862 | 85.2 |
| Other | 44,693 | 14.9 | 40,656 | 14.8 |
| Total | $300,924 | 100.0 | $274,518 | 100.0 |

| | Nine Months Ended September 30, | |
|---|---|---|
| | 2018 | 2017 |

| | Amount | % | Amount | % |
|---|---|---|---|---|
| Client Location: | | | | |
| United States | $824,716 | 94.6 | $745,011 | 95.9 |
| Other | 46,928 | 5.4 | 31,874 | 4.1 |
| Total | $871,644 | 100.0 | $776,885 | 100.0 |
| | | | | |
| Underwriting location: | | | | |
| United States | $742,269 | 85.2 | $661,645 | 85.2 |
| Other | 129,375 | 14.8 | 115,240 | 14.8 |
| Total | $871,644 | 100.0 | $776,885 | 100.0 |

Net premiums earned for the 2018 third quarter were 9.6% higher than in the 2017 third quarter. For the nine months ended September 30, 2018, net premiums earned were 12.2% higher than in the 2017 period. The increases were primarily due to growth in insurance in force for Arch MI U.S.

Other Underwriting Income.

Other underwriting income, which is primarily related to older GSE credit risk-sharing transactions receiving derivative accounting treatment, was $3.7 million for the 2018 third quarter, compared to $3.6 million for the 2017 third quarter, and $10.5 million for the nine months ended September 30, 2018, compared to $12.0 million for the 2017 period.

Losses and Loss Adjustment Expenses.

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

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Current year | 16.0 % | 20.6 % | 17.2 % | 20.5 % |
| Prior period reserve development | (12.8)% | (7.8 )% | (8.6 )% | (9.6 )% |
| Loss ratio | 3.2 % | 12.8 % | 8.6 % | 10.9 % |

Current Year Loss Ratio.

The mortgage segment's current year loss ratio was 4.6 points lower in the 2018 third quarter than in the 2017 third quarter. The mortgage segment's current year loss ratio was 3.3 points lower for the nine months ended September 30, 2018 than for the 2017 period. The lower current year loss ratios for the 2018 periods reflect the current favorable macroeconomic environment.

Prior Period Reserve Development.

The mortgage segment's net favorable development was $38.6 million, or 12.8 points, for the 2018 third quarter, compared to $21.5 million, or 7.8 points, for the 2017 third quarter, and $74.9 million, or 8.6 points, for the nine months ended September 30, 2018, compared to $74.9 million, or 9.6 points, for the 2017 period. See note 5, "Reserve for Losses and Loss Adjustment

Expenses,” to our consolidated financial statements for information about the mortgage segment’s prior year reserve development.
Underwriting Expenses.
2018 Third Quarter versus 2017 Third Quarter. The underwriting expense ratio for the mortgage segment was 21.4% in the 2018 third quarter, compared to 20.6% in the 2017 third quarter, reflecting a higher level of acquisition expenses due to higher NIW and a lower level of other operating expenses.
Nine Months Ended September 30, 2018 versus 2017 period. The underwriting expense ratio for the mortgage segment was 22.6% for the nine months ended September 30, 2018, compared to 23.8% for the 2017 period. The lower underwriting expense ratio in the 2018 period reflected a higher level of net premiums earned and expense savings from integration efforts following the acquisition of UGC.
Corporate (Non-Underwriting) Segment
The corporate (non-underwriting) segment results include net investment income, other income (loss), corporate expenses, transaction costs and other, amortization of intangible assets, interest expense, items related to our non-cumulative preferred shares, 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 income taxes. Such amounts exclude the results of the ‘other’ segment.
Net Investment Income.
The components of net investment income were derived from the following sources:

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Fixed maturities | $103,252 | $84,602 | $294,658 | $251,039 |
| Equity securities | 3,426 | 3,210 | 10,408 | 10,152 |
| Short-term investments | 4,417 | 2,514 | 12,591 | 5,624 |
| Other (1) | 18,030 | 18,238 | 56,501 | 57,770 |
| Gross investment income | 129,125 | 108,564 | 374,158 | 324,585 |
| Investment expenses (2) | (14,797 ) | (14,437 ) | (51,826 ) | (42,126 ) |
| Net investment income | $114,328 | $94,127 | $322,332 | 282,459 |

(1) Amounts include dividends and other distributions on investment funds, term loan investments, funds held balances, cash balances and other items.
(2) Investment expenses were approximately 0.29% of average invested assets for the 2018 third quarter, compared to 0.32% for the 2017 third quarter, and 0.36% for the nine months ended September 30, 2018, compared to 0.30% for the 2017 period.

The higher level of net investment income for the 2018 third quarter reflected an increase in the embedded book yield on fixed income securities, partially offset by a higher level of expenses. The pre-tax investment income yield, calculated based on amortized cost and on an annualized basis, was 2.45% for the 2018 third quarter, compare to 2.00% for the 2017 third quarter, and 2.31% for the nine months ended September 30, 2018, compared to 2.04% for the 2017 period.
Corporate Expenses.
Corporate expenses were $13.2 million for the 2018 third quarter, compared to $14.1 million for the 2017 third quarter, and $43.3 million for the nine months ended September 30, 2018, compared to $48.5 million for the 2017 period. The lower level of corporate expenses in the 2018 periods was primarily due to lower incentive compensation costs.
Transaction Costs and Other.
Transaction costs and other were $1.1 million for the 2018 third quarter, compared to $3.0 million for the 2017 third quarter, and $8.8 million for the nine months ended September 30, 2018, compared to $21.2 million for the 2017 period. Amounts for the nine months ended September 30, 2018 were primarily attributable to the write off of intangible assets related to insurance licenses for a subsidiary of UGC which was merged with another subsidiary.

Amounts for the 2017 periods primarily related to severance and related costs along with incentive compensation paid in conjunction with the UGC acquisition.

Amortization of Intangible Assets.

Amortization of intangible assets for the 2018 third quarter was $26.3 million, compared to $31.8 million for the 2017 third quarter, and $79.5 million for the nine months ended September 30, 2018, compared to $93.9 million for the 2017 period. Amounts in both periods primarily related to amortization of finite-lived intangible assets related to the UGC acquisition, as disclosed in our Form 10-K.

Interest Expense.

Interest expense was $24.7 million for the 2018 third quarter, compared to the $26.3 million for the 2017 third quarter, and $76.6 million for the nine months ended September 30, 2018, compared to $77.9 million for the 2017 period.

Loss on Redemption of Preferred Shares.

In January 2018, we redeemed all remaining 6.75% Series C preferred shares and, in accordance with GAAP, recorded a loss of $2.7 million to remove original issuance costs related to the redeemed shares from additional paid-in capital. Such adjustment had no impact on total shareholders’ equity or cash flows.

Net Realized Gains or Losses.
We recorded net realized losses of $47.0 million for the 2018 third quarter, compared to net realized gains of $64.1 million for the 2017 third quarter, and net realized losses of $218.4 million for the nine months ended September 30, 2018, compared to net realized gains of $110.7 million for the 2017 period. 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 include 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 and in the fair value of equities pursuant to new accounting guidance effective in the 2018 first quarter, along with re-measurement of contingent consideration liability amounts. See note 6, “Investment Information—Net Realized Gains (Losses),” to our consolidated financial statements for additional information.
Net Impairment Losses Recognized in Earnings.
We recorded $0.5 million of impairment losses for the 2018 third quarter, compared to $1.9 million for the 2017 third quarter, and $1.1 million for the nine months ended September 30, 2018, compared to $5.4 million for the 2017 period. See note 6, “Investment Information—Other-Than-Temporary Impairments,” to our consolidated financial statements for additional information.
Equity in Net Income (Loss) of Investment Funds Accounted for Using the Equity Method.
We recorded $16.0 million of equity in net income related to investment funds accounted for using the equity method in the 2018 third quarter, compared to $31.1 million of income for the 2017 third quarter, and $52.5 million of income for the nine months ended September 30, 2018, compared to $111.9 million for the 2017 period. Investment funds accounted for using the equity method totaled $1.52 billion at September 30, 2018, compared to $1.04 billion at December 31, 2017.
Net Foreign Exchange Gains or Losses.
Net foreign exchange gains for the 2018 third quarter were $7.1 million, compared to net foreign exchange losses for the 2017 third quarter of $27.8 million. Net foreign exchange gains for the nine months ended September 30, 2018 were $38.3 million, compared to net foreign exchange losses for the 2017 period of $85.5 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.
Income Tax Expense.
Our income tax provision on income (loss) before income taxes resulted in an expense of 12.9% for the 2018 third quarter and 11.3% for the nine months ended September 30, 2018, compared to 14.9% for the 2017 period. The effective tax rates for the 2018 third quarter and nine months ended September 30, 2018 included a discrete income tax expense of $5.6 million and $2.6 million, respectively. The discrete tax items in the 2018 periods primarily relate to a change in judgment regarding the realizability of certain deferred tax assets in the 2018 third quarter, partially offset by tax benefits associated with share-based compensation. Our effective tax rate, which is based upon the expected annual effective tax rate, may fluctuate from period to period based on the relative mix of income or loss reported by jurisdiction and the varying tax rates in each jurisdiction. The change in the U.S. federal corporate tax rate from 35% to 21% commencing on January 1, 2018 contributed to a lower effective tax rate for the 2018 periods as compared to the 2017 periods.
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 10, “Variable Interest Entities and Noncontrolling Interests” and note 4, “Segment Information,” to our consolidated financial statements for additional information on Watford Re.

## CRITICAL ACCOUNTING POLICIES,
## ESTIMATES AND RECENT ACCOUNTING PRONOUNCEMENTS

Critical accounting policies, estimates and recent accounting pronouncements are discussed in Management's Discussion and Analysis of Financial Condition and Results of Operations contained in our 2017 Form 10-K, updated where applicable in the notes accompanying our consolidated financial statements, including note 1, "Basis of Presentation and Recent Accounting Pronouncements."

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FINANCIAL CONDITION

Investable Assets

At September 30, 2018, total investable assets held by Arch were $19.59 billion, excluding the $2.73 billion included in the ‘other’ segment (i.e., attributable to Watford Re).

Investable Assets Held by Arch

The following table summarizes the fair value of the investable assets held by Arch:

| Investable assets (1): | Estimated Fair Value | % of Total |
|---|---|---|
| September 30, 2018 | | |
| Fixed maturities (2) | $14,666,265 | 74.9 |
| Short-term investments (2) | 986,108 | 5.0 |
| Cash | 586,353 | 3.0 |
| Equity securities (2) | 473,071 | 2.4 |
| Other investments (2) | 1,233,280 | 6.3 |
| Investments accounted for using the equity method | 1,524,242 | 7.8 |
| Securities transactions entered into but not settled at the balance sheet date | 122,863 | 0.6 |
| Total investable assets held by Arch | $19,592,182 | 100.0 |
| | | |
| Average effective duration (in years) | 2.94 | |
| Average S&P/Moody’s credit ratings (3) | AA/Aa2 | |
| Embedded book yield (4) | 2.78 % | |
| | | |
| December 31, 2017 | | |
| Fixed maturities (2) | $14,798,213 | 75.1 |
| Short-term investments (2) | 1,509,713 | 7.7 |
| Cash | 551,696 | 2.8 |
| Equity securities (2) | 576,040 | 2.9 |
| Other investments (2) | 1,476,960 | 7.5 |
| Investments accounted for using the equity method | 1,041,322 | 5.3 |
| Securities transactions entered into but not settled at the balance sheet date | (237,523 ) | (1.2 ) |
| Total investable assets held by Arch | $19,716,421 | 100.0 |
| | | |
| Average effective duration (in years) | 2.83 | |
| Average S&P/Moody’s credit ratings (3) | AA-/Aa2 | |
| Embedded book yield (4) | 2.32 % | |

(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 at fair value under the fair value option.

(3) Average credit ratings on our investment portfolio on securities with ratings by Standard & Poor’s Rating Services (“S&P”) and Moody’s Investors Service (“Moody’s”).

(4) Before investment expenses.

At September 30, 2018, approximately $13.73 billion, or 70.1%, of total investable assets held by Arch were internally managed, compared to $13.73 billion, or 69.6%, at December 31, 2017.

The following table summarizes our fixed maturities and fixed maturities pledged under securities lending agreements (“Fixed Maturities”) by type:

| | Estimated | % of |
|---|---|---|

| | Fair Value | Total |
|---|---|---|
| September 30, 2018 | | |
| Corporate bonds | $5,853,112 | 39.9 |
| Mortgage backed securities | 477,547 | 3.3 |
| Municipal bonds | 1,221,893 | 8.3 |
| Commercial mortgage backed securities | 682,516 | 4.7 |
| U.S. government and government agencies | 3,133,301 | 21.4 |
| Non-U.S. government securities | 1,690,982 | 11.5 |
| Asset backed securities | 1,606,914 | 11.0 |
| Total | $14,666,265 | 100.0 |
| | | |
| December 31, 2017 | | |
| Corporate bonds | $4,787,272 | 32.4 |
| Mortgage backed securities | 328,924 | 2.2 |
| Municipal bonds | 2,158,840 | 14.6 |
| Commercial mortgage backed securities | 545,817 | 3.7 |
| U.S. government and government agencies | 3,484,257 | 23.5 |
| Non-U.S. government securities | 1,704,337 | 11.5 |
| Asset backed securities | 1,788,766 | 12.1 |
| Total | $14,798,213 | 100.0 |

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 |
|---|---|---|
| September 30, 2018 | | |
| U.S. government and gov’t agencies (1) | $3,672,429 | 25.0 |
| AAA | 3,691,522 | 25.2 |
| AA | 2,047,332 | 14.0 |
| A | 3,163,536 | 21.6 |
| BBB | 1,317,999 | 9.0 |
| BB | 288,178 | 2.0 |
| B | 219,667 | 1.5 |
| Lower than B | 61,001 | 0.4 |
| Not rated | 204,601 | 1.4 |
| Total | $14,666,265 | 100.0 |
| | | |
| December 31, 2017 | | |
| U.S. government and gov’t agencies (1) | $3,771,835 | 25.5 |
| AAA | 4,080,808 | 27.6 |
| AA | 2,440,864 | 16.5 |
| A | 2,470,936 | 16.7 |
| BBB | 1,157,136 | 7.8 |
| BB | 313,286 | 2.1 |
| B | 254,011 | 1.7 |
| Lower than B | 77,543 | 0.5 |
| Not rated | 231,794 | 1.6 |
| Total | $14,798,213 | 100.0 |

(1) Includes U.S. government-sponsored agency residential mortgage-backed securities and agency commercial mortgage-backed securities.

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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 |
|---|---|---|---|
| September 30, 2018 | | | |
| 0-10% | $12,883,470 | $(222,816) | 98.0 |
| 10-20% | 27,524 | (3,882) | 1.7 |
| 20-30% | 1,112 | (317) | 0.1 |
| Greater than 30% | 514 | (310) | 0.1 |
| Total | $12,912,620 | $(227,325) | 100.0 |
| | | | |
| December 31, 2017 | | | |
| 0-10% | $9,598,768 | $(93,057) | 87.6 |
| 10-20% | 82,638 | (11,269) | 10.6 |
| 20-30% | 2,108 | (671) | 0.6 |
| Greater than 30% | 1,881 | (1,184) | 1.1 |
| Total | $9,685,395 | $(106,181) | 100.0 |

The following table summarizes our top ten exposures to fixed income corporate issuers by fair value at September 30, 2018, excluding guaranteed amounts and covered bonds:

| | Estimated Fair Value | Credit Rating (1) |
|---|---|---|
| Bank of America Corporation | $196,274 | A-/A3 |
| JPMorgan Chase & Co. | 192,109 | A-/A2 |
| Apple Inc. | 170,850 | AA+/Aa1 |
| Citigroup Inc. | 154,844 | A/A2 |
| Wells Fargo & Company | 142,121 | A/A1 |
| Nestle S.A. | 120,486 | AA-/Aa2 |
| Daimler AG | 98,702 | A/A2 |
| Philip Morris International Inc. | 97,997 | A/A2 |
| Morgan Stanley | 95,361 | BBB+/A3 |
| Toyota Motor Corporation | 91,527 | AA-/Aa3 |
| Total | $1,360,271 | |

(1) Average credit ratings as assigned by S&P and Moody’s, respectively.

The following table provides information on our structured securities, which includes residential mortgage-backed securities (“RMBS”), commercial mortgage-backed securities (“CMBS”) and asset-backed securities (“ABS”):

| | Agencies | Investment Grade | Below Investment Grade | Total |
|---|---|---|---|---|
| September 30, 2018 | | | | |
| RMBS | $435,294 | $16,703 | $ 25,550 | $477,547 |
| CMBS | 103,834 | 557,501 | 21,181 | 682,516 |
| ABS | — | 1,530,816 | 76,098 | 1,606,914 |
| Total | $539,128 | $2,105,020 | $ 122,829 | $2,766,977 |
| | | | | |
| December 31, 2017 | | | | |
| RMBS | $284,466 | $14,581 | $ 29,877 | $328,924 |

| | | | | |
|---|---|---|---|---|
| CMBS | 3,112 | 465,980 | 76,725 | 545,817 |
| ABS | — | 1,691,232 | 97,534 | 1,788,766 |
| Total | $287,578 | $2,171,793 | $ 204,136 | $2,663,507 |

At September 30, 2018, our structured securities included $39.0 million par value in sub-prime securities with a fair value of $31.4 million and average credit quality ratings from S&P/Moody's of "CCC-/Caa3," compared to $42.3 million par value with a fair value of $35.4 million and average credit quality ratings of "CCC/Caa3" at December 31, 2017.

The following table provides information on the fair value of our Eurozone investments at September 30, 2018:

| Country (1) | Sovereign (2) | Corporate Bonds | Other (3) | Total |
|---|---|---|---|---|
| Germany | $283,727 | $3,319 | $48,194 | $335,240 |
| Netherlands | 106,070 | 143,435 | 26,580 | 276,085 |
| France | 20,013 | 36,989 | 32,614 | 89,616 |
| Luxembourg | — | 11,667 | 7,824 | 19,491 |
| Ireland | — | 9,349 | 3,885 | 13,234 |
| Spain | — | 2,430 | 8,949 | 11,379 |
| Austria | 3,955 | — | — | 3,955 |
| Belgium | — | — | 3,345 | 3,345 |
| Finland | — | 198 | 1,878 | 2,076 |
| Portugal | — | — | 1,558 | 1,558 |
| Italy | — | — | 1,359 | 1,359 |
| Greece | 75 | — | 733 | 808 |
| Total | $413,840 | $207,387 | $136,919 | $758,146 |

(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 September 30, 2018.

(2) Includes securities issued and/or guaranteed by Eurozone governments.

(3) Includes bank loans, equities and other.

At September 30, 2018, our investment portfolio included $473.1 million of equity securities, compared to $576.0 million at December 31, 2017. Our equity portfolio includes publicly traded common stocks in the natural resources, energy, consumer staples and other sectors.

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The following table summarizes our other investments:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Term loan investments | $ 291,095 | $ 326,085 |
| Asian and emerging markets | 282,606 | 344,068 |
| Mezzanine debt funds | 241,968 | 252,160 |
| Credit related funds | 200,226 | 193,787 |
| Investment grade fixed income | 97,347 | 156,225 |
| Other (1) | 120,038 | 204,635 |
| Total | $ 1,233,280 | $ 1,476,960 |

(1) Includes fund investments with strategies in mortgage servicing rights, transportation and infrastructure assets and other.

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 8, "Derivative Instruments," to our consolidated financial statements for additional disclosures related to 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 7, "Fair Value," to our consolidated financial statements for a summary of our financial assets and liabilities measured at fair value, 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. 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:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Investments accounted for using the fair value option: | | |
| Other investments | $ 1,108,396 | $ 924,410 |
| Fixed maturities | 1,021,132 | 1,177,033 |
| Short-term investments | 224,525 | 256,755 |
| Equity securities | 69,956 | 67,868 |
| Total | 2,424,009 | 2,426,066 |
| Fixed maturities available for sale, at fair value | 305,388 | — |
| Equity securities, at fair value | 46,581 | — |
| Cash | 64,684 | 54,503 |
| Securities sold but not yet purchased | (9,065) | (34,375) |
| Securities transactions entered into but not settled at the balance sheet date | (99,537) | (6,127) |
| Total investable assets included in 'other' segment | $ 2,732,060 | $ 2,440,067 |

Premiums Receivable and Reinsurance Recoverables

At September 30, 2018, 80.0% of premiums receivable of $1.31 billion represented amounts not yet due, while amounts in excess of 90 days overdue were 4.9% of the total. At December 31, 2017, 78.2% of premiums receivable of $1.14 billion represented amounts not yet due, while amounts in excess of 90 days overdue were 4.0% of the total. Our reserves for doubtful accounts were approximately $27.6 million at September 30, 2018, compared to $25.3 million at December 31, 2017.

At September 30, 2018 and December 31, 2017, approximately 64.6% and 69.9% of reinsurance recoverables on paid and unpaid losses (not including ceded unearned premiums) of $2.75 billion and $2.54 billion, respectively, were due from carriers which had an A.M. Best rating of “A-” or better while 35.4% and 30.1%, 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 September 30, 2018 and December 31, 2017. The largest reinsurance recoverables from any one carrier was approximately 2.8% and 2.2%, respectively, of total shareholders’ equity available to Arch at September 30, 2018 and December 31, 2017. Growth in items not rated is due to recoverables from a third party reinsurer related to a retroactive reinsurance transaction to reinsure run-off liabilities associated with certain discontinued U.S. specialty casualty and program exposures. Such amounts are fully collateralized. See note 5, “Reserve for Losses and Loss Adjustment Expenses,” to our consolidated financial statements for additional information.

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Approximately 5.6% of the $72.5 million of paid losses and loss adjustment expenses recoverable at September 30, 2018 were more than 90 days overdue, compared to 3.0% of the $75.2 million of paid losses and loss adjustment expenses recoverable at December 31, 2017. No collection issues were indicated on the amount in excess of 90 days overdue at September 30, 2018.

The effects of reinsurance on written and earned premiums and losses and loss adjustment expenses ("LAE") with unaffiliated reinsurers were as follows:

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2018 | 2017 | 2018 | 2017 |
| Premiums written: | | | | |
| Direct | $1,242,276 | $1,147,793 | $3,601,410 | $3,338,106 |
| Assumed | 489,052 | 500,453 | 1,664,676 | 1,577,789 |
| Ceded | (397,775) | (322,843) | (1,221,093) | (1,065,537) |
| Net | $1,333,553 | $1,325,403 | $4,044,993 | $3,850,358 |
| | | | | |
| Premiums earned: | | | | |
| Direct | $1,223,445 | $1,121,168 | $3,545,493 | $3,216,268 |
| Assumed | 466,361 | 501,587 | 1,446,815 | 1,431,746 |
| Ceded | (398,928) | (360,869) | (1,129,768) | (1,028,237) |
| Net | $1,290,878 | $1,261,886 | $3,862,540 | $3,619,777 |
| | | | | |
| Losses and LAE: | | | | |
| Direct | $718,921 | $917,721 | $1,807,860 | $1,968,900 |
| Assumed | 198,248 | 621,717 | 759,527 | 1,112,255 |
| Ceded | (217,749) | (493,297) | (504,954) | (792,584) |
| Net | $699,420 | $1,046,141 | $2,062,433 | $2,288,571 |

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.

At September 30, 2018 and December 31, 2017, our Loss Reserves, net of unpaid losses and loss adjustment expenses recoverable, by type and by operating segment were as follows:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Insurance segment: | | |
| Case reserves | $ 1,452,306 | $ 1,648,910 |
| IBNR reserves | 3,250,821 | 3,272,351 |
| Total net reserves | 4,703,127 | 4,921,261 |
| Reinsurance segment: | | |
| Case reserves | 1,110,837 | 1,033,413 |
| Additional case reserves | 153,014 | 158,377 |
| IBNR reserves | 1,518,487 | 1,499,962 |
| Total net reserves | 2,782,338 | 2,691,752 |
| Mortgage segment: | | |

| | | |
|---|---|---|
| Case reserves | 371,196 | 443,069 |
| IBNR reserves | 139,035 | 104,169 |
| Total net reserves (1) | 510,231 | 547,238 |
| Other segment: | | |
| Case reserves | 347,948 | 260,876 |
| Additional case reserves | 23,691 | 32,587 |
| IBNR reserves | 524,196 | 465,168 |
| Total net reserves | 895,835 | 758,631 |
| Total: | | |
| Case reserves | 3,282,287 | 3,386,268 |
| Additional case reserves | 176,705 | 190,964 |
| IBNR reserves | 5,432,539 | 5,341,650 |
| Total net reserves | $ 8,891,531 | $ 8,918,882 |

(1) At September 30, 2018, total net reserves include $417.3 million from U.S. mortgage insurance business, of which 75.2% represents policy years 2008 and prior and the remainder from later policy years. At December 31, 2017, total net reserves include $477.1 million from U.S. mortgage insurance business, of which 79.8% represents policy years 2008 and prior and the remainder from later policy years.

At September 30, 2018 and December 31, 2017, the insurance segment's Loss Reserves by major line of business, net of unpaid losses and loss adjustment expenses recoverable, were as follows:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Insurance segment: | | |
| Professional lines (1) | $ 1,267,979 | $ 1,308,261 |
| Construction and national accounts | 1,143,717 | 1,094,300 |
| Excess and surplus casualty (2) | 630,692 | 672,903 |
| Programs | 454,355 | 644,340 |
| Property, energy, marine and aviation | 383,387 | 437,518 |
| Travel, accident and health | 87,178 | 86,122 |
| Lenders products | 50,357 | 53,912 |
| Other (3) | 685,462 | 623,905 |
| Total net reserves | $ 4,703,127 | $ 4,921,261 |

(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.

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At September 30, 2018 and December 31, 2017, the reinsurance segment's Loss Reserves by major line of business, net of unpaid losses and loss adjustment expenses recoverable, were as follows:

| | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Reinsurance segment: | | |
| Casualty (1) | $ 1,496,712 | $ 1,489,933 |
| Other specialty (2) | 604,290 | 523,321 |
| Property excluding property catastrophe (3) | 397,091 | 376,020 |
| Marine and aviation | 132,324 | 135,484 |
| Property catastrophe | 80,297 | 98,622 |
| Other (4) | 71,624 | 68,372 |
| Total net reserves | $ 2,782,338 | $ 2,691,752 |

(1) Includes executive assurance, professional liability, workers' compensation, excess motor, healthcare and other.
(2) Includes non-excess motor, surety, accident and health, workers' compensation catastrophe, agriculture, trade credit and other.
(3) Includes facultative business.
(4) Includes life, casualty clash and other.

Mortgage Operations Supplemental Information

The mortgage segment's insurance in force ("IIF") and risk in force ("RIF") were as follows at September 30, 2018 and December 31, 2017:

| (U.S. Dollars in millions) | September 30, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Insurance In Force (IIF) (1): | | | | |
| U.S. primary mortgage insurance | $272,409 | 73.1 | $253,914 | 72.2 |
| Mortgage reinsurance | 26,500 | 7.1 | 28,017 | 8.0 |
| Other (2) | 73,903 | 19.8 | 69,905 | 19.9 |
| Total | $372,812 | 100.0 | $351,836 | 100.0 |
| | | | | |
| Risk In Force (RIF) (3): | | | | |
| U.S. primary mortgage insurance | $69,764 | 92.5 | $64,904 | 92.3 |
| Mortgage reinsurance | 2,264 | 3.0 | 2,473 | 3.5 |
| Other (2) | 3,425 | 4.5 | 2,921 | 4.2 |
| Total | $75,453 | 100.0 | $70,298 | 100.0 |

(1) Represents the aggregate dollar amount of each insured mortgage loan's current principal balance.
(2) Includes GSE credit risk-sharing transactions and international insurance business.
(3) Represents the aggregate dollar 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 credit risk-sharing or reinsurance transactions.

The insurance in force and risk in force for our U.S. primary mortgage insurance business by policy year were as follows at September 30, 2018:

| (U.S. Dollars in millions) | IIF Amount | % | RIF Amount | % | Delinquency Rate (1) | |
|---|---|---|---|---|---|---|
| Policy year: | | | | | | |
| 2008 and prior | $22,238 | 8.2 | $5,041 | 7.2 | 8.84 | % |
| 2009 | 807 | 0.3 | 187 | 0.3 | 2.88 | % |
| 2010 | 721 | 0.3 | 196 | 0.3 | 2.51 | % |
| 2011 | 2,875 | 1.1 | 792 | 1.1 | 1.49 | % |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2012 | 10,534 | 3.9 | 2,901 | 4.2 | 0.73 | % |
| 2013 | 17,913 | 6.6 | 4,968 | 7.1 | 0.84 | % |
| 2014 | 19,258 | 7.1 | 5,193 | 7.4 | 0.90 | % |
| 2015 | 35,608 | 13.1 | 9,290 | 13.3 | 0.62 | % |
| 2016 | 55,043 | 20.2 | 14,040 | 20.1 | 0.64 | % |
| 2017 | 55,876 | 20.5 | 14,162 | 20.3 | 0.44 | % |
| 2018 | 51,536 | 18.9 | 12,994 | 18.6 | 0.07 | % |
| Total | $272,409 | 100.0 | $69,764 | 100.0 | 1.60 | % |

(1) Represents the ending percentage of loans in default.

The insurance in force and risk in force for our U.S. primary mortgage insurance business by policy year were as follows at December 31, 2017:

| (U.S. Dollars in millions) | IIF Amount | % | RIF Amount | % | Delinquency Rate (1) | |
|---|---|---|---|---|---|---|
| Policy year: | | | | | | |
| 2008 and prior | $26,140 | 10.3 | $6,003 | 9.2 | 10.24 | % |
| 2009 | 1,072 | 0.4 | 253 | 0.4 | 2.94 | % |
| 2010 | 1,089 | 0.4 | 295 | 0.5 | 2.31 | % |
| 2011 | 3,828 | 1.5 | 1,046 | 1.6 | 1.37 | % |
| 2012 | 13,247 | 5.2 | 3,629 | 5.6 | 0.75 | % |
| 2013 | 21,840 | 8.6 | 5,996 | 9.2 | 0.95 | % |
| 2014 | 22,884 | 9.0 | 6,112 | 9.4 | 1.10 | % |
| 2015 | 41,991 | 16.5 | 10,828 | 16.7 | 0.77 | % |
| 2016 | 62,020 | 24.4 | 15,643 | 24.1 | 0.80 | % |
| 2017 | 59,803 | 23.6 | 15,099 | 23.3 | 0.35 | % |
| Total | $253,914 | 100.0 | $64,904 | 100.0 | 2.23 | % |

(1) Represents the ending percentage of loans in default.

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The following tables provide supplemental disclosures on risk in force for our U.S. primary mortgage insurance business at September 30, 2018 and December 31, 2017:

| (U.S. Dollars in millions) | September 30, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Credit quality (FICO): | | | | |
| >=740 | $40,466 | 58.0 | $37,794 | 58.2 |
| 680-739 | 23,371 | 33.5 | 21,213 | 32.7 |
| 620-679 | 5,413 | 7.8 | 5,159 | 7.9 |
| <620 | 514 | 0.7 | 738 | 1.1 |
| Total | $69,764 | 100.0 | $64,904 | 100.0 |
| Weighted average FICO score | 743 | | 743 | |
| | | | | |
| Loan-to-value (LTV): | | | | |
| 95.01% and above | $7,506 | 10.8 | $6,337 | 9.8 |
| 90.01% to 95.00% | 38,748 | 55.5 | 36,174 | 55.7 |
| 85.01% to 90.00% | 20,464 | 29.3 | 19,482 | 30.0 |
| 85.00% and below | 3,046 | 4.4 | 2,911 | 4.5 |
| Total | $69,764 | 100.0 | $64,904 | 100.0 |
| Weighted average LTV | 93.0 % | | 92.9 % | |
| | | | | |
| Total RIF, net of external reinsurance | $54,558 | | $49,100 | |

| (U.S. Dollars in millions) | September 30, 2018 | | December 31, 2017 | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Total RIF by State: | | | | |
| Texas | $5,406 | 7.7 | $5,151 | 7.9 |
| California | 4,310 | 6.2 | 3,803 | 5.9 |
| Florida | 3,395 | 4.9 | 2,881 | 4.4 |
| Virginia | 2,914 | 4.2 | 2,773 | 4.3 |
| Georgia | 2,542 | 3.6 | 2,331 | 3.6 |
| North Carolina | 2,500 | 3.6 | 2,410 | 3.7 |
| Illinois | 2,442 | 3.5 | 2,229 | 3.4 |
| Washington | 2,370 | 3.4 | 2,294 | 3.5 |
| Maryland | 2,369 | 3.4 | 2,234 | 3.4 |
| Minnesota | 2,365 | 3.4 | 2,165 | 3.3 |
| Others | 39,151 | 56.1 | 36,633 | 56.4 |
| Total | $69,764 | 100.0 | $64,904 | 100.0 |

The following table provides supplemental disclosures for our U.S. primary mortgage insurance business related to insured loans and loss metrics:

| (U.S. Dollars in thousands, except policy, loan and claim count) | Nine Months Ended September 30, | |
|---|---|---|
| | 2018 | 2017 |
| Roll-forward of insured loans in default: | | |
| Beginning delinquent number of loans | 27,068 | 29,691 |
| New notices (1) | 27,258 | 27,749 |
| Cures | (31,111 ) | (28,676 ) |
| Paid claims | (2,854 ) | (4,994 ) |

| | | |
|---|---|---|
| Ending delinquent number of loans (1)(2) | 20,361 | 23,770 |
| Ending number of policies in force (2) | 1,270,728 | 1,202,619 |
| Delinquency rate (1)(2) | 1.60 % | 1.98 % |
| Losses: | | |
| Number of claims paid | 2,854 | 4,994 |
| Total paid claims | $118,492 | $216,155 |
| Average per claim | $41.5 | $43.3 |
| Severity (3) | 102.0 % | 103.1 % |
| Average reserve per default (in thousands) | $18.1 | $19.3 |

(1) There were no incremental new notices for the nine months ended September 30, 2018 and 450 ending delinquent loans at September 30, 2018 attributable to the 2017 third quarter hurricanes.
(2) Includes first lien primary and pool policies.
(3) Represents total paid claims divided by RIF of loans for which claims were paid.

The risk-to-capital ratio, which represents total current (non-delinquent) risk in force, net of reinsurance, divided by total statutory capital, for Arch MI U.S. was approximately 11.4 to 1 at September 30, 2018, compared to 10.8 to 1 at December 31, 2017.

Shareholders' Equity and Book Value per Share

Total shareholders' equity available to Arch was $9.36 billion at September 30, 2018, compared to $9.20 billion at December 31, 2017. The increase reflected strong underwriting results, partially offset by share buybacks and negative investment returns resulting from the increase in interest rates during the period.

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The following table presents the calculation of book value per share:

| (U.S. dollars in thousands, except share data) | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Total shareholders' equity available to Arch | $ 9,355,148 | $ 9,196,602 |
| Less preferred shareholders' equity | 780,000 | 872,555 |
| Common shareholders' equity available to Arch | $ 8,575,148 | $ 8,324,047 |
| Common shares and common share equivalents outstanding, net of treasury shares (1) | 405,524,360 | 409,956,417 |
| Book value per share | $ 21.15 | $ 20.30 |

(1) Excludes the effects of 20,078,946 and 19,770,174 stock options and 1,442,564 and 913,488 restricted stock units outstanding at September 30, 2018 and December 31, 2017, respectively.

## LIQUIDITY

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.

Liquidity is a measure of our ability to access sufficient cash flows to meet the short-term and long-term cash requirements of our business operations.

Arch Capital is a holding company whose assets primarily consist of the shares in its subsidiaries. Generally, Arch Capital 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.

For the nine months ended September 30, 2018, Arch Capital received dividends of $269.2 million from Arch Re Bermuda, our Bermuda-based reinsurer and insurer, which can pay approximately $1.90 billion to Arch Capital during the remainder of 2018 without providing an affidavit to the Bermuda Monetary Authority ("BMA").

For the nine months ended September 30, 2018, Arch Capital Group (U.S.) Inc. ("Arch-U.S.") received $25.0 million of dividends from Arch Reinsurance Company ("Arch Re U.S."), our U.S.-licensed reinsurer. Arch Re U.S. can pay approximately $103.8 million to Arch-U.S. during the remainder of 2018, subject to the approval of the Commissioner of the Delaware Department of Insurance.

For the nine months ended September 30, 2018, Arch-U.S. received $150.0 million of dividends from Arch U.S. MI

Holdings Inc., a subsidiary of Arch-U.S., which received $400.0 million of dividends from United Guaranty Residential Insurance Company ("UGRIC") and other UGC companies. Arch U.S. MI Holdings Inc. used $250.0 million of such proceeds to pay down its revolving credit agreement borrowings. UGRIC has no remaining ordinary dividend capacity for the remainder of 2018.

We expect that our liquidity needs, including our anticipated (re)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.

### Cash Flows

The following table summarizes our cash flows from operating, investing and financing activities, excluding amounts related to the 'other' segment (i.e., Watford Re). See note 10, "Variable Interest Entities and Noncontrolling Interests," for cash flows related to Watford Re.

| | Nine Months Ended September 30, 2018 | 2017 |
|---|---|---|
| Total cash provided by (used for): | | |
| Operating activities | $947,656 | $839,783 |

| | | |
|---|---|---|
| Investing activities | (181,774 ) | (485,866 ) |
| Financing activities | (713,511 ) | (348,337 ) |
| Effects of exchange rate changes on foreign currency cash | (9,867 ) | 15,599 |
| Increase (decrease) in cash and restricted cash | $42,504 | $21,179 |

•Cash provided by operating activities for the nine months ended September 30, 2018 reflected a higher level of premiums collected than in the 2017 period and an income tax refund, partially offset by a retroactive reinsurance transaction with a third party reinsurer, while the 2017 period reflected higher purchases of tax and loss bonds.
•Cash used for investing activities for the nine months ended September 30, 2018 was lower than in the 2017 period, primarily reflecting the sale of short term investments to fund the financing activities noted below. In addition, activity for the 2018 period reflected higher net purchases of fixed maturity investments than in the 2017 period.
•Cash used for financing activities for the nine months ended September 30, 2018 was higher than in the 2017 period, and reflected $250.0 million of paydowns on our revolving credit agreement borrowings, $184.5 million of repurchases under our share repurchase program and $92.6 million related to redemption of our Series C preferred shares in January 2018.

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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.

The following table provides an analysis of our capital structure:

| (U.S. dollars in thousands, except share data) | Sep 30, 2018 | Dec 31, 2017 |
|---|---|---|
| Debt: | | |
| Senior notes, due May 2034 | $297,125 | $297,053 |
| Arch-U.S. senior notes, due Nov 2043 (1) | 494,697 | 494,621 |
| Arch Finance senior notes, due Dec 2026 (1) | 496,319 | 496,043 |
| Arch Finance senior notes, due Dec 2046 (1) | 445,223 | 445,167 |
| Revolving credit agreement borrowings due Oct 2021 (2) | 125,000 | 375,000 |
| Total | $1,858,364 | $2,107,884 |
| | | |
| Shareholders' equity available to Arch: | | |
| Series C non-cumulative preferred shares (3) | $— | $92,555 |
| Series E non-cumulative preferred shares | 450,000 | 450,000 |
| Series F non-cumulative preferred shares | 330,000 | 330,000 |
| Common shareholders' equity | 8,575,148 | 8,324,047 |
| Total | $9,355,148 | $9,196,602 |
| | | |
| Total capital available to Arch | $11,213,512 | $11,304,486 |
| | | |
| Senior notes to total capital (%) | 15.5 | 15.3 |
| Revolving credit agreement borrowings to total capital (%) | 1.1 | 3.3 |
| Debt to total capital (%) | 16.6 | 18.6 |
| Preferred to total capital (%) | 7.0 | 7.7 |
| Debt and preferred to total capital (%) | 23.5 | 26.4 |

(1) Fully and unconditionally guaranteed by Arch Capital.
(2) $500 million unsecured facility for revolving loans and letters of credit.
(3) Redeemed on January 2, 2018.

Arch Capital and Arch-U.S. are each holding companies and, accordingly, they conduct substantially all of their operations through their operating subsidiaries. Arch Capital Finance LLC ("Arch Finance") is a wholly owned subsidiary of Arch U.S. MI Holdings Inc. As a result, Arch Capital, Arch-U.S. and Arch Finance's cash flows and their ability to service their debt depends upon the earnings of their operating subsidiaries, or affiliates in the case of Arch Finance, and on their ability to distribute the earnings, loans or other payments from such subsidiaries or affiliates to Arch Capital, Arch-U.S. and Arch Finance, respectively.

In addition, Arch MI U.S. is required to maintain compliance with the GSEs requirements, known as the Private Mortgage Insurer Eligibility Requirements or "PMIERs." 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. Arch MI U.S. satisfied the PMIERs' financial requirements as of September 30, 2018 with an estimated PMIER sufficiency ratio of 151%, compared to 129% at

December 31, 2017.

Arch Capital, 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. Historically, our insurance, reinsurance and mortgage insurance subsidiaries have entered into separate reinsurance arrangements with Arch Re Bermuda covering individual lines of business. The reinsurance agreements between our U.S.-based property casualty insurance and reinsurance subsidiaries and Arch Re Bermuda were canceled on a cutoff basis as of January 1, 2018. As a result, the level of subject business ceded to Arch Re Bermuda was substantially lower for the nine months ended September 30, 2018 than in prior periods.

## SHARE REPURCHASE PROGRAM

The board of directors of Arch Capital has authorized the investment in Arch Capital’s common shares through a share repurchase program. For the nine months ended September 30, 2018, Arch Capital repurchased 6.9 million shares under the share repurchase program with an aggregate purchase price of $184.5 million. Since the inception of the share repurchase program through September 30, 2018, Arch Capital has repurchased 382.6 million common shares for an aggregate purchase price of $3.87 billion. At September 30, 2018, approximately $262.0 million of share repurchases were available under the program, which 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.

## CATASTROPHIC EVENTS AND SEVERE ECONOMIC EVENTS

We have large aggregate exposures to natural and man-made catastrophic events and severe economic events. Catastrophes can be caused by various events, including hurricanes, floods, 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 mortgage insurance, 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.

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 available to Arch. We reserve the right to change this threshold at any time.

Based on in-force exposure estimated as of October 1, 2018, our modeled peak zone catastrophe exposure was a windstorm affecting the Northeastern U.S., with a net probable maximum pre-tax loss of $393 million, followed by windstorms affecting Florida Tri-County and the Gulf of Mexico regions with net probable maximum pre-tax losses of $382 million and $326 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. As of October 1, 2018, our modeled peak zone earthquake exposure (San Francisco earthquake) represented approximately 72% 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.

Effective July 1, 2018, our insurance operations had in effect a reinsurance program which provided coverage for certain property-catastrophe related losses equal to $275 million in excess of a $75 million retention per occurrence. Such amounts compare to $200 million in excess of a $150 million retention per occurrence prior to July 1, 2018.

We also have significant exposure to losses due to mortgage defaults resulting from severe economic events in the future. For our U.S. mortgage insurance business, we have developed a proprietary risk model ("Realistic Disaster Scenario" or "RDS") that simulates the maximum loss resulting from a severe economic downturn impacting the housing market. The RDS models the collective impact of adverse conditions for key economic indicators, the most significant of which is a decline in home prices. The RDS model projects paths of future home prices, unemployment rates, income levels and interest rates and assumes correlation across states and geographic regions. The resulting future performance of our in-force portfolio is then estimated under the economic stress scenario, reflecting loan and borrower information.

Currently, we seek to limit our modeled RDS loss from a severe economic event to approximately 25% of total tangible shareholders' equity available to Arch (total shareholders' equity available to Arch less goodwill and intangible assets). We reserve the right to change this threshold at any time. Based on in-force exposure estimated as of October 1, 2018, our modeled RDS loss was less than 12% of tangible shareholders' equity available to Arch.

Net probable maximum loss estimates are net of expected reinsurance recoveries, before income tax and before excess reinsurance reinstatement premiums. RDS loss estimates are net of expected reinsurance recoveries and after income tax. Catastrophe 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 catastrophe loss estimates include clash estimates from other zones. Our catastrophe loss estimates and RDS 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 or tangible shareholders' equity from one or more catastrophic events or severe economic 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 or severe economic 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—Catastrophic Events and Severe Economic Events" in our 2017 Form 10-K.

## OFF-BALANCE SHEET ARRANGEMENTS

Off-balance sheet arrangements are discussed in Management’s Discussion and Analysis of Financial Condition and Results of Operations contained in our 2017 Form 10-K.

## MARKET SENSITIVE INSTRUMENTS AND RISK MANAGEMENT

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 September 30, 2018. Market risk represents the risk of changes in the fair value of a financial instrument and is

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comprised of several components, including liquidity, basis and price risks. 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 our investment in Watford Re's common and preferred shares and counterparty credit risk (mitigated by collateral) arising from reinsurance transactions.

An analysis of material changes in market risk exposures at September 30, 2018 that affect the quantitative and qualitative disclosures presented in our 2017 Form 10-K (see section captioned "Management's Discussion and Analysis of Financial Condition and Results of Operations—Market Sensitive Instruments and Risk Management") were as follows:

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 fair 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 fair 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 fixed income securities:

| (U.S. dollars in billions) | Interest Rate Shift in Basis Points | | | | |
|---|---|---|---|---|---|
| | -100 | -50 | — | +50 | +100 |
| Sep 30, 2018 | | | | | |
| Total fair value | $19.07 | $18.79 | $18.53 | $18.25 | $18.00 |
| Change from base | 2.9 % | 1.4 % | | (1.5 )% | (2.9 )% |
| Change in unrealized value | $0.54 | $0.26 | | $(0.28 ) | $(0.54 ) |
| | | | | | |
| Dec 31, 2017 | | | | | |
| Total fair value | $19.11 | $18.85 | $18.59 | $18.33 | $18.09 |
| Change from base | 2.8 % | 1.4 % | | (1.4 )% | (2.7 )% |
| Change in unrealized value | $0.52 | $0.26 | | $(0.26 ) | $(0.50 ) |

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 our fixed income securities:

| (U.S. dollars in billions) | Credit Spread Shift in Percentage Points | | | | |
|---|---|---|---|---|---|
| | -100 | -50 | — | +50 | +100 |
| Sep 30, 2018 | | | | | |
| Total fair value | $18.87 | $18.70 | $18.53 | $18.37 | $18.20 |
| Change from base | 1.8 % | 0.9 % | | (0.9 )% | (1.8 )% |
| Change in unrealized value | $0.33 | $0.17 | | $(0.17 ) | $(0.33 ) |
| | | | | | |
| Dec 31, 2017 | | | | | |
| Total fair value | $18.96 | $18.77 | $18.59 | $18.40 | $18.22 |
| Change from base | 2.0 % | 1.0 % | | (1.0 )% | (2.0 )% |
| Change in unrealized value | $0.37 | $0.19 | | $(0.19 ) | $(0.37 ) |

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 September 30, 2018, our portfolio’s VaR was estimated to be 2.91% compared to an estimated 3.10% at December 31, 2017.

Equity Securities. At September 30, 2018 and December 31, 2017, the fair value of our investments in equity securities totaled $473.1 million and $576.0 million, respectively. These investments are exposed to price risk, which is the potential loss arising from decreases in fair value. An immediate hypothetical 10% decline in the value of each position would reduce the fair value of such investments by approximately $47.3 million and $57.6 million at September 30, 2018 and December 31, 2017, respectively, and would have decreased book value per share by approximately $0.12 and $0.14, respectively. An immediate hypothetical 10% increase in the value of each position would increase the fair value of such investments by approximately $47.3 million and $57.6 million at September 30, 2018 and December 31, 2017, respectively, and would have increased book value per share by approximately $0.12 and $0.14, respectively.

Investment-Related Derivatives. At September 30, 2018, 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 \$3.34 billion, compared to \$2.44 billion at December 31, 2017. If the underlying exposure of each investment-related derivative held at September 30, 2018 depreciated by 100 basis points, it would have resulted in a reduction in net income of approximately \$33.4 million, and a decrease in book value per share of approximately \$0.08 per share, compared to \$24.4 million and \$0.06 per share, respectively, on investment-related derivatives held at December 31, 2017. If the underlying exposure of each investment-related derivative held at September 30, 2018 appreciated by 100 basis points, it would have resulted in an increase in net income of approximately \$33.4 million, and an increase in book value per share of approximately \$0.08 per share, compared to \$24.4 million and \$0.06 per share, respectively, on investment-related derivatives held at December 31, 2017. See note 8, "Derivative Instruments," to our consolidated financial statements for additional disclosures concerning derivatives.
For further discussion on investment activity, please refer to "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 8, "Derivative Instruments," to 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) | September 30, 2018 | December 31, 2017 |
|---|---|---|
| Net assets (liabilities), denominated in foreign currencies, excluding shareholders' equity and derivatives | \$ (325,607 ) | \$ 401,966 |
| Shareholders' equity denominated in foreign currencies (1) | 357,797 | 345,743 |
| Net foreign currency forward contracts outstanding (2) | 233,106 | (123,732 ) |
| Net exposures denominated in foreign currencies | \$ 265,296 | \$ 623,977 |
| | | |
| Pre-tax impact of a hypothetical 10% appreciation of the U.S. Dollar against foreign currencies: | | |
| Shareholders' equity | \$ (26,530 ) | \$ (62,398 ) |
| Book value per share | \$ (0.07 ) | \$ (0.15 ) |
| | | |
| Pre-tax impact of a hypothetical 10% decline of the U.S. Dollar against foreign currencies: | | |
| Shareholders' equity | \$ 26,530 | \$ 62,398 |
| Book value per share | \$ 0.07 | \$ 0.15 |

(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 we generally attempt to match the currency of our projected liabilities with investments in the same currencies, from time to time we may elect to over or underweight one or more currencies, which could increase our exposure to foreign currency fluctuations and increase the volatility of our 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.

## OTHER FINANCIAL INFORMATION

The consolidated financial statements as of September 30, 2018 and for the three month and nine month periods ended September 30, 2018 and 2017 have been reviewed by PricewaterhouseCoopers LLP, the registrant's independent public accountants, whose report is included as an exhibit to this filing. The report of PricewaterhouseCoopers LLP states that they did not audit and they do not express an opinion on that unaudited financial information. Accordingly, the degree of reliance on their report on such information should be restricted in light of the limited nature of the review procedures applied. PricewaterhouseCoopers LLP is not subject to the liability provisions of Section 11 of the Securities Act of 1933 for their report on the unaudited financial information because that report is not a "report" or a "part" of the registration statement prepared or certified by PricewaterhouseCoopers LLP within the meaning of Sections 7 and 11 of the Securities Act of 1933.

## ITEM 3. 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 Operations,” which information is hereby incorporated by reference.

## ITEM 4. CONTROLS AND PROCEDURES

### Evaluation of Disclosure Controls and Procedures

In connection with the filing of this Form 10-Q, our management, including the Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of disclosure controls and procedures pursuant to applicable Exchange Act Rules as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures were effective as of the end of and during the period covered by this report with respect to information being recorded, processed, summarized and reported within time periods specified in the SEC’s rules and forms and with respect to timely communication to them and other members of management responsible for preparing periodic reports of all material information required to be disclosed in this report as it relates to Arch Capital and its consolidated subsidiaries.

We continue to enhance our operating procedures and internal controls 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.

### Changes in Internal Controls Over Financial Reporting

There have been no changes in internal control over financial reporting that occurred during the quarter ended September 30, 2018 that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting.

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## PART II. OTHER INFORMATION

## ITEM 1. 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 September 30, 2018, 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 1A. RISK FACTORS

There were no material changes from the risk factors previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2017.

## ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

The following table summarizes our purchases of common shares for the 2018 third quarter:

Issuer Purchases of Equity Securities

| 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) |
|---|---|---|---|---|
| 7/1/2018 - 7/31/2018 | 429,120 | $ 26.59 | 413,671 | $ 261,971 |
| 8/1/2018 - 8/31/2018 | 62,129 | 30.30 | — | $ 261,971 |
| 9/1/2018 - 9/30/2018 | 10,843 | 30.27 | — | $ 261,971 |
| Total | 502,092 | $ 27.13 | 413,671 | |

(1) Represents repurchases by Arch Capital 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 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 September 30, 2018 under Arch Capital'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.

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ITEM 5. OTHER INFORMATION

In accordance with Section 10a(i)(2) of the Securities Exchange Act of 1934, as amended, we are responsible for disclosing non-audit services to be provided by our independent auditor, PricewaterhouseCoopers LLP, which are approved by the Audit Committee of our board of directors. During the 2018 third quarter, the Audit Committee approved engagements of PricewaterhouseCoopers LLP for permitted non-audit services, which consisted of tax consulting services, tax compliance services and other accounting consulting services.

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.

On January 16, 2016, the Office of Foreign Assets Control of the U.S. Department of the Treasury (“OFAC”) adopted General License H which authorized 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 complied with certain specific requirements set forth therein.

Certain of our non-U.S. subsidiaries issue global marine policies that provide coverage for vessels navigating into and out of ports worldwide. In light of European Union and U.S. modifications to Iran sanctions in 2016, including the issuance of General License H, and consistent with General License H, we have been notified that certain of our policyholders shipped cargo to and from Iran, and that such cargo may include transporting crude oil from Iran to another country. Since these policies insure multiple voyages and fleets containing multiple ships, we are unable to attribute gross revenues and net profits from such marine policies to these activities involving Iran. On May 8, 2018, the President announced that the U.S. will cease participation in the Joint Comprehensive Plan of Action and will begin reimposing the U.S. nuclear-related sanctions over a six month period. Since May 8, 2018, we have not entered into any new transactions that had previously been permitted under General License H. On June 27, 2018, OFAC revoked General License H and added Section 560.537 to the Iranian Transactions and Sanctions Regulations, which authorizes all transactions and activities that are ordinarily incident and necessary to the winding down of activities previously approved under General License H through November 4, 2018. Our non-U.S. subsidiaries completed their General License H wind down activities by November 4, 2018, in accordance with all applicable laws and regulations.

## ITEM 6. EXHIBITS

| Exhibit No. | Description |
|---|---|
| 15 | Accountants’ Awareness Letter (regarding unaudited interim financial information) |
| 31.1 | Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 |
| 31.2 | Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 |
| 32.1 | Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 32.2 | Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 101 | The following financial information from Arch Capital Group Ltd.’s Quarterly Report for the quarter ended September 30, 2018 formatted in XBRL: (i) Consolidated Balance Sheets at September 30, 2018 and December 31, 2017; (ii) Consolidated Statements of Income for the three and nine month periods ended September 30, 2018 and 2017; (iii) Consolidated Statements of Comprehensive Income for the three and nine month periods ended September 30, 2018 and 2017; (iv) Consolidated Statements of Changes in Shareholders’ Equity for the three and nine month periods ended September 30, 2018 and 2017; (v) Consolidated Statements of Cash Flows for the nine month periods ended September 30, 2018 and 2017; and (vi) Notes to Consolidated Financial Statements. |

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## SIGNATURES

Pursuant to the requirements 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.<br>(REGISTRANT) |
| Date: November 9, 2018 | /s/ Marc Grandisson<br>Marc Grandisson<br>President and Chief Executive Officer (Principal Executive Officer) |
| Date: November 9, 2018 | /s/ François Morin<br>François Morin<br>Executive Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer) |