ARCH CAPITAL GROUP LTD.
Form 10-Q
May 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 March 31, 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 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer,” “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 May 4, 2018, there were 135,775,651 common shares, $0.0033 par value per share, of the registrant outstanding.

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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” 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 United Guaranty Corporation and any other businesses we have acquired or may acquire into our existing operations;
- our ability to maintain or improve our ratings, which may be affected by our ability to raise additional equity or debt financings, by ratings agencies’ existing or new policies and practices, as well as other factors described herein;
- general economic and market conditions (including inflation, interest rates, unemployment, housing prices, foreign currency exchange rates, prevailing credit terms and the depth and duration of a recession) and conditions specific to the reinsurance and insurance markets (including the length and magnitude of the current “soft” market) in which we operate;
- competition, including increased competition, on the basis of pricing, capacity (including alternative sources of capital), coverage terms, or other factors;
- developments in the world’s financial and capital markets and our access to such markets;
- our ability to successfully enhance, integrate and maintain operating procedures (including information technology) to effectively support our current and new business;
- the loss of key personnel;
- accuracy of those estimates and judgments utilized in the preparation of our financial statements, including those related to revenue recognition, insurance and other reserves, reinsurance recoverables, investment valuations, intangible assets, bad debts, income taxes, contingencies and litigation, and any determination to use the deposit method of accounting, which for a relatively new insurance and reinsurance company, like our company, are even more difficult to make than those made in a mature company since relatively limited historical information has been reported to us through March 31, 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;

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- our investment performance, including legislative or regulatory developments that may adversely affect the fair value of our investments;
- changes in general economic conditions, including new or continued sovereign debt concerns in Eurozone countries or downgrades of U.S. securities by credit rating agencies, which could affect our business, financial condition and results of operations;
- the volatility of our shareholders' equity from foreign currency fluctuations, which could increase due to us not matching portions of our projected liabilities in foreign currencies with investments in the same currencies;
- losses relating to aviation business and business produced by a certain managing underwriting agency for which we may be liable to the purchaser of our prior reinsurance business or to others in connection with the May 5, 2000 asset sale described in our periodic reports filed with the SEC;
- changes in accounting principles or policies or in our application of such accounting principles or policies;
- changes in the political environment of certain countries in which we operate or underwrite business;
- statutory or regulatory developments, including as to tax policy and matters and insurance and other regulatory matters such as the adoption of proposed legislation that would affect Bermuda-headquartered companies and/or Bermuda-based insurers or reinsurers and/or changes in regulations or tax laws applicable to us, our subsidiaries, brokers or customers, 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.

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 March 31, 2018, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for the three-month periods ended March 31, 2018 and March 31, 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 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 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
New York, NY
May 9, 2018

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

	(Unaudited) March 31, 2018	December 31, 2017
Assets		
Investments:		
Fixed maturities available for sale, at fair value (amortized cost: $14,469,013 and $13,869,460)	$14,348,941	$13,876,003
Short-term investments available for sale, at fair value (amortized cost: $966,722 and $1,468,955)	967,389	1,469,042
Collateral received under securities lending, at fair value (amortized cost: $367,034 and $476,605)	367,043	476,615
Equity securities, at fair value	543,650	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	4,119,139	4,216,237
Investments accounted for using the equity method	1,394,548	1,041,322
Total investments	21,740,710	21,840,012
Cash	680,891	606,199
Accrued investment income	106,114	113,133
Securities pledged under securities lending, at fair value (amortized cost: $356,518 and $463,181)	358,152	464,917
Premiums receivable	1,375,080	1,135,249
Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses	2,510,119	2,540,143
Contractholder receivables	2,002,469	1,978,414
Ceded unearned premiums	996,772	926,611
Deferred acquisition costs	596,264	535,824
Receivable for securities sold	217,224	205,536
Goodwill and intangible assets	626,004	652,611
Other assets	922,156	1,053,009
Total assets	$32,131,955	$32,051,658
Liabilities		
Reserve for losses and loss adjustment expenses	$11,496,205	$11,383,792
Unearned premiums	3,885,297	3,622,314
Reinsurance balances payable	379,728	323,496
Contractholder payables	2,002,469	1,978,414
Collateral held for insured obligations	253,709	240,183
Senior notes	1,733,043	1,732,884
Revolving credit agreement borrowings	755,294	816,132
Securities lending payable	367,034	476,605
Payable for securities purchased	282,731	449,186
Other liabilities	765,948	782,717
Total liabilities	21,921,458	21,805,723
Commitments and Contingencies		
Redeemable noncontrolling interests	206,013	205,922

Shareholders' Equity		
Non-cumulative preferred shares	780,000	872,555
Convertible non-voting common equivalent preferred shares	—	489,627
Common shares ($0.0033 par, shares issued: 189,070,234 and 183,290,742)	630	611
Additional paid-in capital	1,737,978	1,230,617
Retained earnings	8,849,959	8,562,889
Accumulated other comprehensive income (loss), net of deferred income tax	(134,009)	118,044
Common shares held in treasury, at cost (shares: 52,387,812 and 52,312,803)	(2,084,186)	(2,077,741)
Total shareholders' equity available to Arch	9,150,372	9,196,602
Non-redeemable noncontrolling interests	854,112	843,411
Total shareholders' equity	10,004,484	10,040,013
Total liabilities, noncontrolling interests and shareholders' equity	$32,131,955	$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 March 31,	
	2018	2017
Revenues		
Net premiums written	$1,412,544	$1,276,260
Change in unearned premiums	(177,645)	(159,243)
Net premiums earned	1,234,899	1,117,017
Net investment income	126,724	117,874
Net realized gains (losses)	(110,998)	34,153
Other-than-temporary impairment losses	(162)	(1,807)
Less investment impairments recognized in other comprehensive income, before taxes	—	—
Net impairment losses recognized in earnings	(162)	(1,807)
Other underwriting income	5,349	4,633
Equity in net income (loss) of investment funds accounted for using the equity method	28,069	48,088
Other income (loss)	74	(782)
Total revenues	1,283,955	1,319,176
Expenses		
Losses and loss adjustment expenses	636,860	552,570
Acquisition expenses	191,376	182,289
Other operating expenses	175,015	174,719
Corporate expenses	15,312	27,792
Amortization of intangible assets	26,736	31,294
Interest expense	30,636	28,676
Net foreign exchange losses (gains)	19,721	19,404
Total expenses	1,095,656	1,016,744
Income before income taxes	188,299	302,432
Income tax expense	(21,915)	(28,397)
Net income	$166,384	$274,035
Net (income) loss attributable to noncontrolling interests	(15,961)	(20,908)
Net income available to Arch	150,423	253,127
Preferred dividends	(10,437)	(11,218)
Loss on redemption of preferred shares	(2,710)	—
Net income available to Arch common shareholders	$137,276	$241,909
Net income per common share and common share equivalent		
Basic	$1.01	$1.80
Diluted	$0.99	$1.74
Weighted average common shares and common share equivalents outstanding		
Basic	135,846,576	134,034,927
Diluted	139,297,934	139,047,672

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 March 31,	
	2018	2017
Comprehensive Income		
Net income	$166,384	$274,035
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	(166,677)	100,792
Reclassification of net realized (gains) losses, net of income taxes, included in net income	62,461	(5,044)
Foreign currency translation adjustments	1,282	3,124
Comprehensive income	63,450	372,907
Net (income) loss attributable to noncontrolling interests	(15,961)	(20,908)
Foreign currency translation adjustments attributable to noncontrolling interests	673	(8)
Comprehensive income available to Arch	$48,162	$351,991

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

	(Unaudited) Three Months Ended March 31,	
	2018	2017
Non-cumulative preferred shares		
Balance at beginning of year	$872,555	$772,555
Preferred shares redeemed	(92,555)	—
Balance at end of period	780,000	772,555
Convertible non-voting common equivalent preferred shares		
Balance at beginning of year	489,627	1,101,304
Preferred shares converted to common shares	(489,627)	—
Balance at end of period	—	1,101,304
Common shares		
Balance at beginning of year	611	582
Common shares issued, net	19	1
Balance at end of period	630	583
Additional paid-in capital		
Balance at beginning of year	1,230,617	531,687
Preferred shares converted to common shares	489,608	—
Reversal of issue costs on preferred shares redeemed	2,710	—
All other	15,043	16,366
Balance at end of period	1,737,978	548,053
Retained earnings		
Balance at beginning of year	8,562,889	7,996,701
Cumulative effect of an accounting change (see Note 2)	149,794	(314)
Balance at beginning of year, as adjusted	8,712,683	7,996,387
Net income	166,384	274,035
Net (income) loss attributable to noncontrolling interests	(15,961)	(20,908)
Preferred share dividends	(10,437)	(11,218)
Loss on redemption of preferred shares	(2,710)	—
Balance at end of period	8,849,959	8,238,296
Accumulated other comprehensive income (loss), net of deferred income tax		
Balance at beginning of year	118,044	(114,541)
Unrealized appreciation (decline) in value of available-for-sale investments, net of deferred income tax:		
Balance at beginning of year	157,400	(27,641)
Cumulative effect of an accounting change (see Note 2)	(149,794)	—
Balance at beginning of year, as adjusted	7,606	(27,641)
Unrealized holding gains (losses) arising during period, net of reclassification adjustment	(104,216)	95,748
Unrealized holding gains (losses) arising during period attributable to noncontrolling interests	372	—

Balance at end of period	(96,238)	68,107
Foreign currency translation adjustments, net of deferred income tax:		
Balance at beginning of year	(39,356)	(86,900)
Foreign currency translation adjustments	1,282	3,124
Foreign currency translation adjustments attributable to noncontrolling interests	303	(8)
Balance at end of period	(37,771)	(83,784)
Balance at end of period	(134,009)	(15,677)
Common shares held in treasury, at cost		
Balance at beginning of year	(2,077,741)	(2,034,570)
Shares repurchased for treasury	(6,445)	(4,700)
Balance at end of period	(2,084,186)	(2,039,270)
Total shareholders’ equity available to Arch	9,150,372	8,605,844
Non-redeemable noncontrolling interests	854,112	868,186
Total shareholders’ equity	$10,004,484	$9,474,030

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) Three Months Ended March 31,	
	2018	2017
Operating Activities		
Net income	$166,384	$ 274,035
Adjustments to reconcile net income to net cash provided by operating activities:		
Net realized (gains) losses	101,995	(40,855)
Net impairment losses recognized in earnings	162	1,807
Equity in net income or loss of investment funds accounted for using the equity method and other income or loss	(19,383)	(36,141)
Amortization of intangible assets	26,736	31,294
Share-based compensation	14,664	15,657
Changes in:		
Reserve for losses and loss adjustment expenses, net of unpaid losses and loss adjustment expenses recoverable	86,319	53,027
Unearned premiums, net of ceded unearned premiums	177,645	159,243
Premiums receivable	(233,772)	(176,350)
Deferred acquisition costs	(30,347)	(41,728)
Reinsurance balances payable	53,634	20,114
Other items, net	56,143	(76,445)
Net cash provided by operating activities	400,180	183,658
Investing Activities		
Purchases of fixed maturity investments	(9,681,267)	(10,476,918)
Purchases of equity securities	(377,000)	(143,833)
Purchases of other investments	(522,454)	(427,039)
Proceeds from sales of fixed maturity investments	8,679,147	10,386,746
Proceeds from sales of equity securities	291,311	253,347
Proceeds from sales, redemptions and maturities of other investments	436,566	317,518
Proceeds from redemptions and maturities of fixed maturity investments	287,031	174,718
Net settlements of derivative instruments	36,070	(3,921)
Net (purchases) sales of short-term investments	595,318	(397,851)
Change in cash collateral related to securities lending	161,567	180,946
Purchases of fixed assets	(4,240)	(5,194)
Other	40,037	23,068
Net cash provided by (used for) investing activities	(57,914)	(118,413)
Financing Activities		
Redemption of preferred shares	(92,555)	—
Purchases of common shares under share repurchase program	(3,299)	—
Proceeds from common shares issued, net	(2,779)	(3,990)
Proceeds from borrowings	39,585	—
Repayments of borrowings	(101,000)	(22,000)
Change in cash collateral related to securities lending	(161,567)	(180,946)
Dividends paid to redeemable noncontrolling interests	(4,497)	(4,497)
Other	(2,356)	(5,018)
Preferred dividends paid	(10,437)	(11,218)

Net cash provided by (used for) financing activities	(338,905)	(227,669)
Effects of exchange rate changes on foreign currency cash and restricted cash	1,611	2,618
Increase (decrease) in cash and restricted cash	4,972	(159,806)
Cash and restricted cash, beginning of year	727,284	969,569
Cash and restricted cash, end of period	$732,256	$ 809,763

Reconciliation of cash and restricted cash within the Consolidated Balance Sheets:	March 31, 2018	December 31, 2017
Cash	$680,891	$ 606,199
Restricted cash (included in ‘other assets’)	$51,365	$ 121,085
Cash and restricted cash	$732,256	$ 727,284

See Notes to Consolidated Financial Statements

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

1. General

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 3.

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.

2. 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.

Recently Issued Accounting Standards Not Yet Adopted

For information regarding 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.

3. 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.

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

	March 31, 2018	December 31, 2017
Assets		
Investments accounted for using the fair value option	$2,331,393	$2,426,066
Fixed maturities available for sale, at fair value	203,176	—
Cash	54,053	54,503
Accrued investment income	16,831	18,261
Premiums receivable	242,116	177,492
Reinsurance recoverable on unpaid and paid losses and LAE	47,289	42,777
Ceded unearned premiums	45,111	24,762
Deferred acquisition costs	92,699	85,961
Receivable for securities sold	47,568	36,374
Goodwill and intangible assets	7,650	7,650
Other assets	63,143	140,808
Total assets of consolidated VIE	$3,151,029	$3,014,654
Liabilities		
Reserves for losses and loss adjustment expenses	$852,828	$798,262
Unearned premiums	395,605	330,644
Reinsurance balances payable	26,340	18,424
Revolving credit agreement borrowings	380,294	441,132
Payable for securities purchased	79,786	42,501

Other liabilities	235,554	215,186
Total liabilities of consolidated VIE	$1,970,407	$1,846,149
Redeemable noncontrolling interests	$220,713	$220,622

For the three months ended March 31, 2018, Watford Re generated $30.2 million of cash provided by operating activities, $35.4 million of cash used for investing activities and $66.2 million of cash used for financing activities, compared to $62.2 million of cash provided by operating activities, $58.8 million of cash used for investing activities and $29.0 million of cash used for financing activities for the three months ended March 31, 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 March 31, 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:

Three Months Ended	March 31, 2018	2017
Balance, beginning of period	$843,411	$851,854
Amounts attributable to noncontrolling interests	11,376	16,324
Foreign currency translation adjustments	(675)	8
Balance, end of period	$854,112	$868,186

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:

Three Months Ended	March 31, 2018	2017
Balance, beginning of period	$205,922	$205,553
Accretion of preference share issuance costs	91	91
Balance, end of period	$206,013	$205,644

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:

Three Months Ended	March 31, 2018	2017
Amounts attributable to non-redeemable noncontrolling interests	$(11,376)	$(16,324)
Dividends attributable to redeemable noncontrolling interests	(4,585)	(4,584)
Net (income) loss attributable to noncontrolling interests	$(15,961)	$(20,908)

Bellemeade Re

The Company has entered into various aggregate excess of loss reinsurance agreements with Bellemeade Re I Ltd. (July 2015), with Bellemeade Re II Ltd. (May 2016) and with Bellemeade 2017-1 Ltd. (October 2017) (the "Bellemeade Agreements"),

special purpose reinsurance companies domiciled in Bermuda. 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 Bellemeade Re I Ltd., Bellemeade Re II Ltd. and Bellemeade 2017-1 Ltd. are VIEs. However, given that the ceding insurers do not have the unilateral power to direct those activities that are significant to the economic performance of Bellemeade Re I Ltd., Bellemeade Re II Ltd. and Bellemeade 2017-1 Ltd., the Company does not consolidate such companies in its consolidated financial statements.

The following table presents total assets of Bellemeade Re I Ltd., Bellemeade Re II Ltd. and Bellemeade 2017-1 Ltd., as well as the Company's maximum exposure to loss associated with these VIEs as of March 31, 2018 and December 31, 2017:

Maximum Exposure to Loss

	Total VIE Assets	On-Balance Sheet	Off-Balance Sheet	Total
March 31, 2018				
Bellemeade Re I Ltd.	$79,372	$360	$ 610	$970
Bellemeade Re II Ltd.	100,871	72	278	350
Bellemeade 2017-1 Ltd.	336,343	519	1,979	2,498
Total	$516,586	$951	$ 2,867	$3,818
December 31, 2017				
Bellemeade Re I Ltd.	$92,390	$471	$ 832	$1,303
Bellemeade Re II Ltd.	135,201	20	527	547
Bellemeade 2017-1 Ltd.	347,139	391	1,867	2,258
Total	$574,730	$882	$ 3,226	$4,108

See note 16, “Subsequent Events.”

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4. Earnings Per Common Share

The following table sets forth the computation of basic and diluted earnings per common share:

	Three Months Ended March 31,	
	2018	2017
Numerator:		
Net income	$ 166,384	$ 274,035
Amounts attributable to noncontrolling interests	(15,961)	(20,908)
Net income available to Arch	150,423	253,127
Preferred dividends	(10,437)	(11,218)
Loss on redemption of preferred shares	(2,710)	—
Net income available to Arch common shareholders	$ 137,276	$ 241,909
Denominator:		
Weighted average common shares outstanding	131,370,263	121,272,107
Series D preferred shares (1)	4,476,313	12,762,820
Weighted average common shares and common share equivalents outstanding — basic	135,846,576	134,034,927
Effect of dilutive common share equivalents:		
Nonvested restricted shares	719,859	1,646,555
Stock options (2)	2,731,499	3,366,190
Weighted average common shares and common share equivalents outstanding — diluted	139,297,934	139,047,672
Earnings per common share:		
Basic	$ 1.01	$ 1.80
Diluted	$ 0.99	$ 1.74

(1) Such shares are convertible non-voting common equivalent preferred shares issued in connection with the UGC acquisition. See Note 11.

(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 first quarter and 2017 first quarter, the number of stock options excluded were 1,056,262 and 263,475, respectively.

5. Segment Information

The Company classifies its businesses into three underwriting segments — insurance, reinsurance and mortgage — and two other operating segments — ‘other’ and corporate (non-underwriting). The Company determined its reportable segments using the management approach described in accounting guidance regarding disclosures about segments of an enterprise and related information. The accounting policies of the segments are the same as those used for the preparation of the Company’s consolidated financial statements. Intersegment business is allocated to the segment accountable for the underwriting results.

The Company’s insurance, reinsurance and mortgage segments each have managers who are responsible for the overall profitability of their respective segments and who are directly accountable to the Company’s chief operating decision makers, the 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, UGC 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 3). 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 March 31, 2018					
	Insurance	Reinsurance	Mortgage	Sub-Total	Other	Total
Gross premiums written (1)	$823,378	$577,483	$321,178	$1,721,605	$213,870	$1,838,214
Premiums ceded	(247,180)	(195,730)	(46,137)	(488,613)	(34,318)	(425,670)
Net premiums written	576,198	381,753	275,041	1,232,992	179,552	1,412,544
Change in unearned premiums	(37,461)	(102,581)	5,201	(134,841)	(42,804)	(177,645)
Net premiums earned	538,737	279,172	280,242	1,098,151	136,748	1,234,899
Other underwriting income (loss)	—	1,232	3,416	4,648	701	5,349
Losses and loss adjustment expenses	(353,730)	(141,675)	(43,466)	(538,871)	(97,989)	(636,860)
Acquisition expenses	(85,169)	(48,319)	(26,567)	(160,055)	(31,321)	(191,376)
Other operating expenses	(91,974)	(35,571)	(38,771)	(166,316)	(8,699)	(175,015)
Underwriting income (loss)	$7,864	$54,839	$174,854	237,557	(560)	236,997
Net investment income				100,243	26,481	126,724
Net realized gains (losses)				(111,859)	861	(110,998)
Net impairment losses recognized in earnings				(162)	—	(162)
Equity in net income (loss) of investment funds accounted for using the equity method				28,069	—	28,069
Other income (loss)				74	—	74
Corporate expenses (2)				(14,482)	—	(14,482)
UGC transaction costs and other (2)				(830)	—	(830)
Amortization of intangible assets				(26,736)	—	(26,736)
Interest expense				(25,907)	(4,729)	(30,636)
Net foreign exchange gains (losses)				(15,039)	(4,682)	(19,721)
Income before income taxes				170,928	17,371	188,299
Income tax expense				(21,912)	(3)	(21,915)
Net income				149,016	17,368	166,384
Dividends attributable to redeemable noncontrolling interests				—	(4,585)	(4,585)
Amounts attributable to nonredeemable noncontrolling interests				—	(11,376)	(11,376)
Net income available to Arch				149,016	1,407	150,423
Preferred dividends				(10,437)	—	(10,437)
Loss on redemption of preferred shares				(2,710)	—	(2,710)
Net income available to Arch common shareholders				$135,869	$1,407	$137,276
Underwriting Ratios						
Loss ratio	65.7%	50.7%	15.5%	49.1%	71.7%	51.6%

Acquisition expense ratio	15.8	%	17.3	%	9.5	%	14.6	%	22.9	%	15.5	%
Other operating expense ratio	17.1	%	12.7	%	13.8	%	15.1	%	6.4	%	14.2	%
Combined ratio	98.6	%	80.7	%	38.8	%	78.8	%	101.0	%	81.3	%
Goodwill and intangible assets	$21,664		$—		$596,690		$618,354		$7,650		$626,004	

(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 ‘UGC transaction costs and other.’ See ‘Comments on Regulation G’ for a further discussion of the presentation of such items.

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	Three Months Ended March 31, 2017					
	Insurance	Reinsurance	Mortgage	Sub-Total	Other	Total
Gross premiums written (1)	$782,281	$475,782	$348,623	$1,606,686	$154,120	$1,657,990
Premiums ceded	(234,095)	(166,092)	(73,925)	(474,112)	(10,434)	(381,730)
Net premiums written	548,186	309,690	274,698	1,132,574	143,686	1,276,260
Change in unearned premiums	(42,540)	(64,839)	(30,175)	(137,554)	(21,689)	(159,243)
Net premiums earned	505,646	244,851	244,523	995,020	121,997	1,117,017
Other underwriting income (loss)	—	(306)	4,123	3,817	816	4,633
Losses and loss adjustment expenses	(332,641)	(105,454)	(29,065)	(467,160)	(85,410)	(552,570)
Acquisition expenses	(74,868)	(46,147)	(28,766)	(149,781)	(32,508)	(182,289)
Other operating expenses	(88,126)	(37,533)	(41,870)	(167,529)	(7,190)	(174,719)
Underwriting income (loss)	$10,011	$55,411	$148,945	214,367	(2,295)	212,072
Net investment income				95,812	22,062	117,874
Net realized gains (losses)				28,512	5,641	34,153
Net impairment losses recognized in earnings				(1,807)	—	(1,807)
Equity in net income (loss) of investment funds accounted for using the equity method				48,088	—	48,088
Other income (loss)				(782)	—	(782)
Corporate expenses (2)				(12,208)	—	(12,208)
UGC transaction costs and other (2)				(15,584)	—	(15,584)
Amortization of intangible assets				(31,294)	—	(31,294)
Interest expense				(25,756)	(2,920)	(28,676)
Net foreign exchange gains (losses)				(19,845)	441	(19,404)
Income before income taxes				279,503	22,929	302,432
Income tax (expense) benefit				(28,397)	—	(28,397)
Net income				251,106	22,929	274,035
Dividends attributable to redeemable noncontrolling interests				—	(4,584)	(4,584)
Amounts attributable to nonredeemable noncontrolling interests				—	(16,324)	(16,324)
Net income available to Arch				251,106	2,021	253,127
Preferred dividends				(11,218)	—	(11,218)
Net income available to Arch common shareholders				$239,888	$2,021	$241,909
Underwriting Ratios						
Loss ratio	65.8 %	43.1 %	11.9 %	46.9 %	70.0 %	49.5 %
Acquisition expense ratio	14.8 %	18.8 %	11.8 %	15.1 %	26.6 %	16.3 %
Other operating expense ratio	17.4 %	15.3 %	17.1 %	16.8 %	5.9 %	15.6 %
Combined ratio	98.0 %	77.2 %	40.8 %	78.8 %	102.5 %	81.4 %

Goodwill and intangible assets	$24,371	$773	$717,521	$742,665	$7,650	$750,315

(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 ‘UGC transaction costs and other.’ See ‘Comments on Regulation G’ for a further discussion of the presentation of such items.

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6. Reserve for Losses and Loss Adjustment Expenses

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

	Three Months Ended March 31,	
	2018	2017
Reserve for losses and loss adjustment expenses at beginning of year	$11,383,792	$10,200,960
Unpaid losses and loss adjustment expenses recoverable	2,464,910	2,083,575
Net reserve for losses and loss adjustment expenses at beginning of year	8,918,882	8,117,385
Net incurred losses and loss adjustment expenses relating to losses occurring in:		
Current year	687,885	635,776
Prior years	(51,025)	(83,206)
Total net incurred losses and loss adjustment expenses	636,860	552,570
Net foreign exchange losses	44,014	31,279
Net paid losses and loss adjustment expenses relating to losses occurring in:		
Current year	(36,000)	(35,003)
Prior years	(514,541)	(464,540)
Total net paid losses and loss adjustment expenses	(550,541)	(499,543)
Net reserve for losses and loss adjustment expenses at end of period	9,049,215	8,201,691
Unpaid losses and loss adjustment expenses recoverable	2,446,990	2,095,130
Reserve for losses and loss adjustment expenses at end of period	$11,496,205	$10,296,821

Development on Prior Year Loss Reserves

2018 First Quarter

During the 2018 first quarter, the Company recorded net favorable development on prior year loss reserves of $51.0 million, which consisted of $36.5 million from the reinsurance segment, $2.1 million from the insurance segment, $13.0 million from the mortgage segment and adverse development of $0.6 million from the ‘other’ segment.
The reinsurance segment’s net favorable development of $36.5 million, or 13.1 points, for the 2018 first quarter consisted of $28.9 million from short-tailed lines and $7.6 million from long-tailed and medium-tailed lines. Favorable development in short-tailed lines included $21.1 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. Favorable development in long-tailed and medium-tailed lines reflected reductions in marine reserves of $6.2 million, primarily from the 2011 accident year, and in casualty reserves of $1.1 million based on varying levels of reported and paid claims activity, primarily from the 2002 to 2009 underwriting years.

The insurance segment’s net favorable development of $2.1 million, or 0.4 points, for the 2018 first quarter consisted of $8.7 million of net favorable development in short-tailed lines and $3.0 million of net favorable development in long-tailed lines, partially offset by $9.6 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 2017 accident year (i.e., the year in which a loss occurred) while net favorable development in long-tailed lines primarily resulted from reductions in casualty reserves of $3.9 million, primarily from the 2012 to 2014 accident years. Net adverse development in medium-tailed lines reflected $10.2 million of adverse development in program business, primarily driven by a few inactive programs that were non-renewed in 2015 and early in 2016.

The mortgage segment's net favorable development was $13.0 million, or 4.6 points, for the 2018 first quarter. The 2018 first quarter development was primarily driven by continued lower than expected claim rates on first lien business and subrogation recoveries on second lien business.

2017 First Quarter

During the 2017 first quarter, the Company recorded net favorable development on prior year loss reserves of $83.2 million, which consisted of $57.2 million from the reinsurance segment, $2.1 million from the insurance segment, $23.6 million from the mortgage segment and $0.3 million from the ‘other’ segment.

The reinsurance segment’s net favorable development of $57.2 million, or 23.4 points, for the 2017 first quarter consisted of $40.8 million from short-tailed lines and $16.4 million from long-tailed and medium-tailed lines. Favorable development in short-tailed lines included $34.0 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 $5.5 million based on varying levels of reported and paid claims activity, primarily from the 2003 to 2013 underwriting years, and favorable development in marine reserves of $9.9 million across most underwriting years.

The insurance segment’s net favorable development of $2.1 million, or 0.4 points, for the 2017 first quarter consisted of $7.0 million of net favorable development in long-tailed lines and $1.9 million of net favorable development in short-tailed lines, partially offset by $6.8 million of net adverse development in medium-tailed lines. Net favorable development in long-tailed lines reflected net reductions in executive assurance reserves from the 2008 to 2014 accident years. 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 adverse development in medium-tailed lines primarily resulted from an increase in programs, partially offset by favorable development of $7.5 million in other medium-tailed lines, primarily in professional liability and surety.

The mortgage segment’s net favorable development was $23.6 million, or 9.6 points, for the 2017 first quarter. The 2017 first quarter development was primarily driven by lower than expected claim rates on first lien business and subrogation recoveries on second lien business.

7. Investment Information

At March 31, 2018, total investable assets of $22.28 billion included $19.79 billion held by the Company and $2.49 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)
March 31, 2018					
Fixed maturities (1):					
Corporate bonds	$5,405,695	$12,379	$(95,220)	$5,488,536	$(73)
Mortgage backed securities	339,662	1,751	(5,054)	342,965	(15)
Municipal bonds	1,553,616	7,906	(24,106)	1,569,816	—
Commercial mortgage backed securities	561,543	1,106	(11,078)	571,515	—
U.S. government and government agencies	3,060,805	5,622	(20,734)	3,075,917	—
Non-U.S. government securities	1,656,859	44,821	(21,910)	1,633,948	—
Asset backed securities	2,121,126	3,891	(17,812)	2,135,047	—
Total	14,699,306	77,476	(195,914)	14,817,744	(88)
Equity securities (3)					
Other investments	—	—	—	—	—
Short-term investments	967,389	1,851	(1,184)	966,722	—
Total	$15,666,695	$79,327	$(197,098)	$15,784,466	$(88)
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 March 31, 2018, the net unrealized gain related to securities for which a non-credit OTTI was recognized in AOCI

was $0.3 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 2). 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
March 31, 2018						
Fixed maturities (1):						
Corporate bonds	$4,504,553	$(85,531)	$262,846	$(9,689)	$4,767,399	$(95,220)
Mortgage backed securities	233,380	(5,025)	722	(29)	234,102	(5,054)
Municipal bonds	952,179	(18,804)	116,001	(5,302)	1,068,180	(24,106)
Commercial mortgage backed securities	375,841	(7,416)	57,015	(3,662)	432,856	(11,078)
U.S. government and government agencies	2,110,130	(19,330)	59,567	(1,404)	2,169,697	(20,734)
Non-U.S. government securities	1,351,254	(20,544)	87,172	(1,366)	1,438,426	(21,910)
Asset backed securities	1,457,917	(14,124)	165,038	(3,688)	1,622,955	(17,812)
Total	10,985,254	(170,774)	748,361	(25,140)	11,733,615	(195,914)
Equity securities (2)						
Other investments	—	—	—	—	—	—
Short-term investments	218,597	(1,184)	—	—	218,597	(1,184)
Total	$11,203,851	$(171,958)	$748,361	$(25,140)	$11,952,212	$(197,098)
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 2). As a result, equity securities are no longer accounted for as available for sale and are excluded from this table.

At March 31, 2018, on a lot level basis, approximately 5,450 security lots out of a total of approximately 7,500 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 $1.1 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.

	March 31, 2018		December 31, 2017	
Maturity	Estimated Fair Value	Amortized Cost	Estimated Fair Value	Amortized Cost
Due in one year or less	$569,345	$567,333	$550,711	$548,771
Due after one year through five years	8,016,509	8,063,846	7,436,153	7,434,801
Due after five years through 10 years	2,817,417	2,865,124	3,369,635	3,369,750
Due after 10 years	273,704	271,914	333,791	325,526
	11,676,975	11,768,217	11,690,290	11,678,848
Mortgage backed securities	339,662	342,965	316,141	317,062
Commercial mortgage backed securities	561,543	571,515	545,817	547,954
Asset backed securities	2,121,126	2,135,047	1,780,143	1,783,610
Total (1)	$14,699,306	$14,817,744	$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 March 31, 2018, the fair value of the cash collateral received on securities lending was $38.3 million and the fair value of security collateral received was $328.7 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
March 31, 2018					
U.S. government and government agencies	$213,300	$2,710	$105,349	$ —	$321,359
Corporate bonds	37,828	—	—	—	37,828
Equity securities	7,847	—	—	—	7,847
Total	$258,975	$2,710	$105,349	$ —	$367,034
					$—

Gross amount of recognized liabilities for securities lending in offsetting disclosure in Note 9					
Amounts related to securities lending not included in offsetting disclosure in Note 9					$367,034
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 9					$—
Amounts related to securities lending not included in offsetting disclosure in Note 9					$476,605

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

	March 31, 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: $1,178,470 and $1,223,453)	$1,160,675	$ 1,200,882
Mezzanine debt funds	234,078	252,160
Credit related funds	205,303	175,422
Investment grade fixed income	106,744	102,347
Asian and emerging markets	340,507	258,541
Other (2)	132,402	147,029
Total fair value option	2,179,709	2,136,381
Total	$2,179,709	$ 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 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 at March 31, 2018.

(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:

	March 31, 2018	December 31, 2017
Fixed maturities	$1,553,870	$ 1,642,855
Other investments	2,179,709	2,136,381

Short-term investments	207,095	297,426
Equity securities	178,465	139,575
Investments accounted for using the fair value option	$4,119,139	$ 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:

	March 31, 2018	December 31, 2017
Investments accounted for using the equity method (1)	$1,210,325	$ 1,041,321
Investments accounted for using the fair value option (2)	157,556	130,471
Total	$1,367,881	$ 1,171,792

(1) Aggregate unfunded commitments were $957.8 million at March 31, 2018, compared to $1.02 billion at December 31, 2017.

(2) Aggregate unfunded commitments were $107.2 million at March 31, 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:

	March 31,	
	2018	2017
Three Months Ended		
Fixed maturities	$107,887	$94,393
Equity securities	2,568	2,643
Short-term investments	4,860	1,759
Other (1)	37,374	39,580
Gross investment income	152,689	138,375
Investment expenses	(25,965)	(20,501)
Net investment income	$126,724	$117,874

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

Net Realized Gains (Losses)

Net realized gains (losses) were as follows, excluding other than-temporary impairment provision.

	March 31,	
	2018	2017
Three Months Ended		
Available for sale securities:		
Gross gains on investment sales	$14,965	$69,175
Gross losses on investment sales	(82,551)	(61,362)
Change in fair value of assets and liabilities accounted for using the fair value option:		
Fixed maturities	(17,551)	20,541
Other investments	(6,374)	17,248
Equity securities	6,668	3,545
Short-term investments	(151)	4
Equity securities (1)	(12,951)	—
Derivative instruments (2)	(3,963)	(9,181)
Other (3)	(9,090)	(5,817)
Net realized gains (losses)	$(110,998)	$34,153

(1) Pursuant to new accounting guidance (see Note 2), changes in fair value on equity securities are recorded through net income effective for the 2018 first quarter. Such amount included $7.6 million of net unrealized losses on equity instruments still held as of March 31, 2018.

(2) See Note 9 for information on the Company's derivative instruments.

(3) Includes the re-measurement of contingent consideration liability amounts.

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

The Company recorded $28.1 million of equity in net income related to investment funds accounted for using the equity method in the 2018 first quarter, compared to $48.1 million for the 2017 first quarter. 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.

Other-Than-Temporary Impairments

The Company performs quarterly reviews of its available for sale investments in order to determine whether declines in fair value below the amortized cost basis were considered other-than-temporary in accordance with applicable guidance.

The following table details the net impairment losses recognized in earnings by asset class:

Three Months Ended	March 31, 2018	March 31, 2017
Fixed maturities:		
Mortgage backed securities	$(42)	$(1,319)
Corporate bonds	(120)	(1)
Non-U.S. government securities	—	(198)
Total	(162)	(1,518)
Equity securities	—	(186)
Other investments	—	(103)
Net impairment losses recognized in earnings	$(162)	$(1,807)

Net impairment losses recognized in earnings in the 2018 first quarter were primarily related to foreign currency fluctuations on one corporate bond.

The Company believes that the $0.1 million of OTTI included in accumulated other comprehensive income at March 31, 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 March 31, 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:

Three Months Ended	March 31, 2018	March 31, 2017
Balance at start of period	$767	$13,138
Credit loss impairments recognized on securities not previously impaired	—	—
Credit loss impairments recognized on securities previously impaired	—	23
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	—	(624)
Balance at end of period	$767	$12,537

Restricted Assets

The Company is required to maintain assets on deposit, which primarily consist of fixed maturities, with various regulatory authorities to support its insurance and reinsurance operations. The Company's insurance and reinsurance subsidiaries maintain assets in trust accounts as collateral for insurance and reinsurance transactions with affiliated companies and also have investments in segregated portfolios primarily to provide collateral or guarantees for letters of credit to third parties. See note 16, "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:

	March 31, 2018	December 31, 2017
Assets used for collateral or guarantees:		
Affiliated transactions	$4,717,146	$ 4,323,726
Third party agreements	1,517,580	1,674,304
Deposits with U.S. regulatory authorities	706,316	616,987
Deposits with non-U.S. regulatory authorities	56,171	55,895
Total restricted assets	$6,997,213	$ 6,670,912

8. 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 March 31, 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 $20.50 billion of financial assets and liabilities measured at fair value at March 31, 2018, approximately $207.9 million, or 1.0%, 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 March 31, 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	$5,405,695	$—	$5,396,543	$ 9,152
Mortgage backed securities	339,662	—	339,294	368
Municipal bonds	1,553,616	—	1,553,616	—
Commercial mortgage backed securities	561,543	—	561,498	45
U.S. government and government agencies	3,060,805	2,999,218	61,587	—
Non-U.S. government securities	1,656,859	—	1,656,859	—
Asset backed securities	2,121,126	—	2,116,126	5,000
Total	14,699,306	2,999,218	11,685,523	14,565
Short-term investments	967,389	866,985	100,404	—
Equity securities, at fair value	551,437	548,279	3,158	—
Derivative instruments (4)	14,649	—	14,649	—
Fair value option:				
Corporate bonds	1,058,042	—	1,046,170	11,872
Non-U.S. government bonds	174,954	—	174,954	—
Mortgage backed securities	18,373	—	18,373	—
Municipal bonds	13,355	—	13,355	—
Commercial mortgage backed securities	1,435	—	1,435	—
Asset backed securities	152,905	—	152,905	—
U.S. government and government agencies	134,806	134,536	270	—
Short-term investments	207,095	17,742	189,353	—
Equity securities	178,465	81,706	96,759	—
Other investments	1,158,368	65,857	1,034,059	58,452
Other investments measured at net asset value (2)	1,021,341			
Total	4,119,139	299,841	2,727,633	70,324
Total assets measured at fair value	$20,351,920	$4,714,323	$14,531,367	$ 84,889
Liabilities measured at fair value:				
Contingent consideration liabilities	$(62,449)	$—	$—	$ (62,449)
Securities sold but not yet purchased (3)	(63,110)	—	(63,110)	—
Derivative instruments (4)	(26,726)	—	(26,726)	—

Total liabilities measured at fair value	$(152,285)	$—	$(89,836)	$ (62,449)

(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 7, “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 9, “Derivative Instruments.”

The following table presents the Company’s financial assets and liabilities measured at fair value by level at December 31, 2017:

	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	$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 7, "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 9, "Derivative Instruments."

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 March 31, 2018						
Balance at beginning of period	$5,927	$9,460	$12,217	$ 59,167	$86,771	$ (60,996)
Total gains or (losses) (realized/unrealized)						
Included in earnings (2)	1	—	12	17	30	(1,453)
Included in other comprehensive income	(4)	148	(87)	(732)	(675)	—
Purchases, issuances, sales and settlements						
Purchases	—	—	—	—	—	—
Issuances	—	—	—	—	—	—
Sales	—	—	—	—	—	—
Settlements	(511)	(456)	(270)	—	(1,237)	—
Transfers in and/or out of Level 3	—	—	—	—	—	—
Balance at end of period	$5,413	$9,152	$11,872	$ 58,452	$84,889	$ (62,449)
Three Months Ended March 31, 2017						
Balance at beginning of period	$11,289	$18,344	$—	$ 25,000	$54,633	$ (122,350)
Total gains or (losses) (realized/unrealized)						
Included in earnings (2)	707	257	—	—	964	(3,646)
Included in other comprehensive income	—	—	—	—	—	—
Purchases, issuances, sales and settlements						
Purchases	—	—	—	—	—	—
Issuances	—	—	—	—	—	—
Sales	—	—	—	—	—	—
Settlements	(1,359)	—	—	—	(1,359)	452
Transfers in and/or out of Level 3	—	—	—	—	—	—
Balance at end of period	$10,637	$18,601	$—	$ 25,000	$54,238	$ (125,544)

(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 March 31, 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 March 31, 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 $1.96 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.

9. 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)
March 31, 2018			
Futures contracts (2)	$1,929	$(6,291)	$1,209,668
Foreign currency forward contracts (2)	4,598	(11,383)	1,489,627
Other (2)	8,122	(9,052)	1,934,144
Total	$14,649	$(26,726)	
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 March 31, 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 March 31, 2018, asset derivatives and liability derivatives of $12.1 million and $25.8 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	March 31,	
hedging instruments:	2018	2017

Three Months Ended

Net realized gains (losses):		
Futures contracts	$5,030	$7,720
Foreign currency forward contracts	(5,924)	(11,766)
TBAs	(97)	(65)
Other	(2,972)	(5,070)
Total	$(3,963)	$(9,181)

10. 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 $1.63 billion at March 31, 2018, compared to $1.70 billion at December 31, 2017.

Interest Paid

Interest paid on the Company’s senior notes and other borrowings were $7.9 million for the three months ended March 31, 2018, compared to $5.8 million for the 2017 period.

11. Share Transactions

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 approximately 125.3 million common shares for an aggregate purchase price of $3.69 billion. For the three months ended March 31, 2018, Arch Capital repurchased 39,405 shares under the share repurchase program with an aggregate purchase price of $3.3 million. Arch Capital did not repurchase any shares under the share repurchase program during the three months ended March 31, 2017. At March 31, 2018, $443.2 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. See note 16, “Subsequent Events.”

Conversion of Convertible Non-Voting Common Equivalent Preferred Shares

In March 2018, Arch Capital completed an underwritten public secondary offering of 5,674,200 common shares by AIG following transfer of 567,420 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 March 31, 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.

12. 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 March 31, 2018	2017
Unrealized appreciation on available-for-sale investments			
	Net realized gains (losses)	$(67,586)	$7,813
	Other-than-temporary impairment losses	(162)	(1,807)
	Total before tax	(67,748)	6,006
	Income tax (expense) benefit	5,287	(962)
	Net of tax	$(62,461)	$5,044

	Before Tax Amount	Tax Expense (Benefit)	Net of Tax Amount
Three Months Ended March 31, 2018			
Unrealized appreciation (decline) in value of investments:			
Unrealized holding gains (losses) arising during period	$(189,943)	$(23,266)	$(166,677)
Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss)	—	—	—
Less reclassification of net realized gains (losses) included in net income	(67,748)	(5,287)	(62,461)
Foreign currency translation adjustments	1,432	150	1,282
Other comprehensive income (loss)	$(120,763)	$(17,829)	$(102,934)
Three Months Ended March 31, 2017			
Unrealized appreciation (decline) in value of investments:			
Unrealized holding gains (losses) arising during period	$111,472	$10,680	$100,792
	—	—	—

Portion of other-than-temporary impairment losses recognized in other comprehensive income (loss)			
Less reclassification of net realized gains (losses) included in net income	6,006	962	5,044
Foreign currency translation adjustments	3,165	41	3,124
Other comprehensive income (loss)	$108,631	$9,759	$98,872

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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13. 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.

Condensed Consolidating Balance Sheet	March 31, 2018 Arch Capital (Parent Guarantor)	Arch-U.S. (Subsidiary Issuer)	Other Arch Capital Subsidiaries	Consolidating Adjustments and Eliminations	Arch Capital Consolidated
Assets					
Total investments	$3,694	$71,440	$21,680,276	$(14,700)	$21,740,710
Cash	7,109	79,577	594,205	—	680,891
Investments in subsidiaries	9,439,099	4,093,247	—	(13,532,346)	—
Due from subsidiaries and affiliates	1,275	1,274	1,869,654	(1,872,203)	—
Premiums receivable	—	—	1,933,663	(558,583)	1,375,080
Reinsurance recoverable on unpaid and paid losses and loss adjustment expenses	—	—	8,471,116	(5,960,997)	2,510,119
Contractholder receivables	—	—	2,002,469	—	2,002,469
Ceded unearned premiums	—	—	1,826,395	(829,623)	996,772
Deferred acquisition costs	—	—	669,631	(73,367)	596,264
Goodwill and intangible assets	—	—	626,004	—	626,004
Other assets	13,262	37,825	5,867,259	(4,314,700)	1,603,646
Total assets	$9,464,439	$4,283,363	$45,540,672	$(27,156,519)	$32,131,955
Liabilities					
Reserve for losses and loss adjustment expenses	$—	$—	$17,193,367	$(5,697,162)	$11,496,205
Unearned premiums	—	—	4,714,920	(829,623)	3,885,297
Reinsurance balances payable	—	—	938,310	(558,582)	379,728
Contractholder payables	—	—	2,002,469	—	2,002,469
Collateral held for insured obligations	—	—	253,709		253,709
Senior notes	297,076	494,646	941,321	—	1,733,043
Revolving credit agreement borrowings	—	—	755,294	—	755,294
Due to subsidiaries and affiliates	1,344	542,045	1,328,814	(1,872,203)	—
Other liabilities	15,647	72,052	5,979,919	(4,651,905)	1,415,713
Total liabilities	314,067	1,108,743	34,108,123	(13,609,475)	21,921,458
Redeemable noncontrolling interests	—	—	220,713	(14,700)	206,013
Shareholders' Equity					
Total shareholders' equity available to Arch	9,150,372	3,174,620	10,357,724	(13,532,344)	9,150,372
Non-redeemable noncontrolling interests	—	—	854,112	—	854,112
Total shareholders' equity	9,150,372	3,174,620	11,211,836	(13,532,344)	10,004,484
Total liabilities, noncontrolling interests and shareholders' equity	$9,464,439	$4,283,363	$45,540,672	$(27,156,519)	$32,131,955

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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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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	Three Months Ended March 31, 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	$—	$ —	$ 1,234,899	$ —	$ 1,234,899
Net investment income	20	258	148,767	(22,321)	126,724
Net realized gains (losses)	29	(7)	(111,020)	—	(110,998)
Net impairment losses recognized in earnings	—	—	(162)	—	(162)
Other underwriting income	—	—	5,349	—	5,349
Equity in net income (loss) of investment funds accounted for using the equity method	—	—	28,069	—	28,069
Other income (loss)	(78)	—	152	—	74
Total revenues	(29)	251	1,306,054	(22,321)	1,283,955
Expenses					
Losses and loss adjustment expenses	—	—	636,860	—	636,860
Acquisition expenses	—	—	191,376	—	191,376
Other operating expenses	—	—	175,015	—	175,015
Corporate expenses	16,169	289	(1,146)	—	15,312
Amortization of intangible assets	—	—	26,736	—	26,736
Interest expense	5,536	11,926	35,172	(21,998)	30,636

Net foreign exchange (gains) losses	29	—	16,436	3,256	19,721
Total expenses	21,734	12,215	1,080,449	(18,742)	1,095,656
Income (loss) before income taxes	(21,763)	(11,964)	225,605	(3,579)	188,299
Income tax (expense) benefit	—	2,951	(24,866)	—	(21,915)
Income (loss) before equity in net income of subsidiaries	(21,763)	(9,013)	200,739	(3,579)	166,384
Equity in net income of subsidiaries	172,186	86,420	—	(258,606)	—
Net income	150,423	77,407	200,739	(262,185)	166,384
Net (income) loss attributable to noncontrolling interests	—	—	(16,284)	323	(15,961)
Net income available to Arch	150,423	77,407	184,455	(261,862)	150,423
Preferred dividends	(10,437)	—	—	—	(10,437)
Loss on redemption of preferred shares	(2,710)	—	—	—	(2,710)
Net income available to Arch common shareholders	$137,276	$ 77,407	$184,455	$ (261,862)	$137,276
Comprehensive income available to Arch	$48,162	$ 6,537	$79,081	$ (85,618)	$48,162

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	Three Months Ended March 31, 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	$—	$ —	$ 1,117,017	$ —	$ 1,117,017
Net investment income	5	816	137,981	(20,928)	117,874
Net realized gains (losses)	—	—	34,153	—	34,153
Net impairment losses recognized in earnings	—	—	(1,807)	—	(1,807)
Other underwriting income	—	—	4,633	—	4,633
Equity in net income (loss) of investment funds accounted for using the equity method	—	—	48,088	—	48,088
Other income (loss)	171	—	(953)	—	(782)
Total revenues	176	816	1,339,112	(20,928)	1,319,176
Expenses					
Losses and loss adjustment expenses	—	—	552,570	—	552,570
Acquisition expenses	—	—	182,289	—	182,289
Other operating expenses	—	—	174,719	—	174,719
Corporate expenses	17,247	2,008	8,537	—	27,792
Amortization of intangible assets	—	—	31,294	—	31,294
Interest expense	6,015	11,930	31,336	(20,605)	28,676

Net foreign exchange (gains) losses	—	—	15,348	4,056	19,404
Total expenses	23,262	13,938	996,093	(16,549)	1,016,744
Income (loss) before income taxes	(23,086)	(13,122)	343,019	(4,379)	302,432
Income tax (expense) benefit	—	4,873	(33,270)	—	(28,397)
Income (loss) before equity in net income of subsidiaries	(23,086)	(8,249)	309,749	(4,379)	274,035
Equity in net income of subsidiaries	276,213	77,373	—	(353,586)	—
Net income	253,127	69,124	309,749	(357,965)	274,035
Net (income) loss attributable to noncontrolling interests	—	—	(21,231)	323	(20,908)
Net income available to Arch	253,127	69,124	288,518	(357,642)	253,127
Preferred dividends	(11,218)	—	—	—	(11,218)
Net income available to Arch common shareholders	$241,909	$ 69,124	$288,518	$ (357,642)	$241,909
Comprehensive income available to Arch	$351,991	$ 87,781	$224,173	$ (311,954)	$351,991

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ARCH CAPITAL GROUP LTD. AND SUBSIDIARIES
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	Three Months Ended March 31, 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	$ 13,315	$ 74,248	$ 419,956	$ (107,339)	$ 400,180
Investing Activities					
Purchases of fixed maturity investments	—	(26,501)	(10,050,206)	395,440	(9,681,267)
Purchases of equity securities	—	—	(377,000)	—	(377,000)
Purchases of other investments	—	—	(522,454)	—	(522,454)
Proceeds from the sales of fixed maturity investments	—	16,997	9,057,590	(395,440)	8,679,147
Proceeds from the sales of equity securities	—	—	291,311	—	291,311
Proceeds from the sales, redemptions and maturities of other investments	—	—	436,566	—	436,566
Proceeds from	—	—	287,031	—	287,031

redemptions and maturities of fixed maturity investments					
Net settlements of derivative instruments	—	—	36,070	—	36,070
Net (purchases) sales of short-term investments	92,885	(15,547)	517,980	—	595,318
Change in cash collateral related to securities lending	—	—	161,567	—	161,567
Contributions to subsidiaries	—	—	(2,970)	2,970	—
Purchases of fixed assets	(13)	—	(4,227)	—	(4,240)
Other	—	—	40,037	—	40,037
Net Cash Provided By (Used For) Investing Activities	92,872	(25,051)	(128,705)	2,970	(57,914)
Financing Activities					
Redemption of preferred shares	(92,555)	—	—	—	(92,555)
Purchases of common shares under share repurchase program	(3,299)	—	—	—	(3,299)
Proceeds from common shares	(2,779)	—	2,970	(2,970)	(2,779)

issued, net					
Proceeds from borrowings	—	—	39,585	—	39,585
Repayments of borrowings	—	—	(101,000)	—	(101,000)
Change in cash collateral related to securities lending	—	—	(161,567)	—	(161,567)
Dividends paid to redeemable noncontrolling interests	—	—	(4,816)	319	(4,497)
Dividends paid to parent (1)	—	—	(107,020)	107,020	—
Other	—	—	(2,356)	—	(2,356)
Preferred dividends paid	(10,437)	—	—	—	(10,437)
Net Cash Provided By (Used For) Financing Activities	(109,070)	—	(334,204)	104,369	(338,905)
Effects of exchange rates changes on foreign currency cash and restricted cash	(4)	—	1,615	—	1,611
Increase (decrease) in cash and restricted cash	(2,887)	49,197	(41,338)	—	4,972
Cash and restricted cash, beginning of year	10,052	30,380	686,852	—	727,284
	$7,165	$ 79,577	$ 645,514	$ —	$ 732,256

Cash and restricted cash, end of period

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

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	Three Months Ended March 31, 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	$701	$ (3,257)	$ 239,628	$ (53,414)	$ 183,658
Investing Activities					
Purchases of fixed maturity investments	—	—	(10,476,918)	—	(10,476,918)
Purchases of equity securities	—	—	(143,833)	—	(143,833)
Purchases of other investments	—	—	(427,039)	—	(427,039)
Proceeds from the sales of fixed maturity investments	—	—	10,386,746	—	10,386,746
Proceeds from the sales of equity securities	—	—	253,347	—	253,347
Proceeds from the sales, redemptions and maturities of other investments	—	—	317,518	—	317,518
	—	—	174,718	—	174,718

Proceeds from redemptions and maturities of fixed maturity investments					
Net settlements of derivative instruments	—	—	(3,921)	—	(3,921)
Net (purchases) sales of short-term investments	2,356	(43)	(400,164)	—	(397,851)
Change in cash collateral related to securities lending	—	—	180,946	—	180,946
Contributions to subsidiaries	—	(25,900)	(60,050)	85,950	—
Purchases of fixed assets	—	(10)	(5,184)	—	(5,194)
Other	20,641	—	23,068	(20,641)	23,068
Net Cash Provided By (Used For) Investing Activities	22,997	(25,953)	(180,766)	65,309	(118,413)
Financing Activities					
Proceeds from common shares issued, net	(3,990)	—	85,950	(85,950)	(3,990)
Repayments of borrowings	—	—	(22,000)	—	(22,000)
Change in cash collateral related to	—	—	(180,946)	—	(180,946)

securities lending					
Dividends paid to redeemable noncontrolling interests	—	—	(4,816)	319	(4,497)
Dividends paid to parent (1)	—	—	(53,095)	53,095	—
Other	—	—	(25,659)	20,641	(5,018)
Preferred dividends paid	(11,218)	—	—	—	(11,218)
Net Cash Provided By (Used For) Financing Activities	(15,208)	—	(200,566)	(11,895)	(227,669)
Effects of exchange rates changes on foreign currency cash and restricted cash	—	—	2,618	—	2,618
Increase (decrease) in cash and restricted cash	8,490	(29,210)	(139,086)	—	(159,806)
Cash and restricted cash, beginning of year	1,738	71,955	895,876	—	969,569
Cash and restricted cash, end of period	$ 10,228	$ 42,745	$ 756,790	$ —	$ 809,763

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

14. Income Taxes

The Company's income tax provision on income before income taxes resulted in an expense of 11.6% for the three months ended March 31, 2018, compared to an expense of 9.4% 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 excess tax benefits that arise from the accounting for stock based compensation as a discrete item. As such, this amount is 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 three-month results before the discrete item. The impact of the discrete item resulted in a benefit of 0.7% for the three months ended March 31, 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 three months ended March 31, 2018 does not include any adjustments to the provisional effects recorded at December 31, 2017.

The Company had a net deferred tax asset of $28.1 million at March 31, 2018, compared to $39.6 million at December 31, 2017. In addition, the Company recovered $49.9 million and paid $0.7 million of income taxes for the three months ended March 31, 2018 and 2017, respectively.

15. 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 March 31, 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.

16. Subsequent Events

Bellemeade 2018-1

In April 2018, the Company's first-lien U.S. mortgage insurance subsidiaries entered into an aggregate excess of loss reinsurance agreement with Bellemeade Re 2018-1 Ltd. ("Bellemeade 2018-1"), a special purpose reinsurance company domiciled in Bermuda. The Bellemeade 2018-1 agreement provides for up to $374.5 million of aggregate excess of loss reinsurance coverage at inception in excess of $168.5 million of aggregate losses for new delinquencies on a portfolio of in-force policies primarily issued from July through December of 2017. The coverage amount decreases over a ten-year period as the underlying covered mortgages amortize.

Bellemeade 2018-1 financed the coverage through the issuance of mortgage insurance-linked notes in an aggregate amount of approximately $374.5 million to unrelated investors (the "Notes"). The maturity date of the Notes is April 25, 2028. The Notes will be redeemed prior to maturity upon the occurrence of a mandatory termination event or if the ceding insurers trigger a termination of the reinsurance agreement following the occurrence of an optional termination event. All of the proceeds paid to Bellemeade 2018-1 from the sale of the Notes were deposited into a reinsurance trust as security for Bellemeade 2018-1’s obligations. At all times, funds in the reinsurance trust account are required to be invested in high credit quality money market funds.

Three-For-One Common Share Split

On February 28, 2018, the board of directors of Arch Capital approved a three-for-one split on Arch Capital’s common shares. The share split was subject to the approval by shareholders of 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. At the 2018 Annual Meeting of Shareholders, shareholders approved the proposed amendment. Such amendment will become effective on June 18, 2018, which will become the record date for the determination of the owners of common shares entitled to additional common shares and the distribution date for such additional common shares will be on or about June 20, 2018. At that time, each record date

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shareholder will become the record owner of, and entitled to receive two additional common shares for each common share then owned of record by such shareholder. Shareholders will receive information about the additional common shares to which they are entitled on or around the distribution date.

The share split will change the Company’s authorized common shares from the current 600 million common shares, U.S. $.0033 par value, to 1.8 billion common shares, U.S. $.0011 par value. Information pertaining to the composition of the Company’s shareholders’ equity accounts, shares and earnings per share has not been restated in the accompanying financial statements and notes to the consolidated financial statements to reflect the share split. Information presented on an unaudited pro forma basis, reflecting the impact of the share split for the 2018 first quarter and 2017 first quarter, is as follows:

	Three Months Ended March 31,	
	2018	2017
Net income available to Arch common shareholders	$137,276	$ 241,909
Net income per common share and common share equivalent data:		
As reported:		
Basic	$1.01	$ 1.80
Diluted	$0.99	$ 1.74
Pro forma:		
Basic	$0.34	$ 0.60
Diluted	$0.33	$ 0.58
Weighted average common shares and common share equivalents outstanding		
As reported:		
Basic	135,846,576	134,034,927
Diluted	139,297,934	139,047,672
Pro forma:		
Basic	407,539,728	402,104,781
Diluted	417,893,802	417,143,016

Share Repurchases

From April 1, 2018 to May 9, 2018, Arch Capital repurchased 1,379,080 shares under the share repurchase program with an aggregate purchase price of $110.5 million. At May 9, 2018, approximately $332.7 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.

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 $11.26 billion in capital at March 31, 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 in our business, consistent with our view in prior quarters, reflecting slight deterioration in rates across certain sectors. As in prior quarters, this has led to flat or lower writings in certain property casualty lines in the 2018 first quarter. However, with the continued low interest rate environment, additional price increases are needed in many lines in order for us to achieve our return requirements. Our underwriting teams continue to execute a disciplined strategy by emphasizing small and medium-sized accounts over large accounts and by utilizing reinsurance purchases to reduce volatility on large account, high capacity business.
Our mortgage segment continues to experience favorable market conditions, albeit with increased pressure on pricing. The mortgage segment includes our U.S. primary mortgage insurance operations, international mortgage insurance and reinsurance operations as well as government sponsored enterprise ("GSE") credit-risk sharing transactions.

Arch remains committed to providing solutions across many offerings as the marketplace evolves. As such, in March 2018, we announced that we, through a new U.S. subsidiary and in conjunction with Federal Home Loan Mortgage Corporation ("Freddie Mac"), are piloting a new mortgage credit risk transfer program, deemed "IMAGIN" (Integrated Mortgage Insurance), to attract a diversified and robust capital base to the U.S. housing market, in a highly efficient structure, that will support market stability through economic cycles. In addition, in April 2018, we announced that we have entered into a multi-year agreement with Munich Re to provide mortgage credit assessment and underwriting advisory services related to Munich Re's involvement in credit risk transfer programs offered by Federal National Mortgage Association ("Fannie Mae") and Freddie Mac, each a GSE.

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 $61.24 at March 31, 2018, compared to $60.91 at December 31, 2017 and $57.69 at March 31, 2017. The 0.5% increase for the 2018 first quarter reflected strong underwriting results, partially offset by the impact of an increase in interest rates on our fixed income securities in the period, while the 6.2% increase over the trailing twelve months reflected strong investment and underwriting results.

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

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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 gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses, UGC transaction costs and other, 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 11.3% for the 2018 first quarter, compared to 10.3% for the 2017 first quarter. The 2018 first quarter reflected strong mortgage insurance underwriting performance and a low 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 First Quarter	(0.32)%	(0.68)%
2017 First Quarter	1.70 %	1.49 %

Excluding the effects of foreign exchange, total return was (0.40)% for the 2018 first quarter, reflecting an increase in interest rates in the 2018 first quarter. Total return for the 2018 first quarter reflected the weakening of the U.S. Dollar against the Euro and British Pound Sterling on non-U.S. Dollar denominated investments.

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

	%
BoAML 1-10 Year U.S. Corporate & All Yankees, A - AAA Rated Index	20.00 %
BoAML 1-5 Year U.S. Treasury Index	15.00
BoAML 1-10 Year U.S. Municipal Securities Index	14.50
BoAML 3-5 Year Fixed Rate Asset Backed Securities Index	7.00
Barclays CMBS Inv. Grade, AAA Rated Index	5.00
MSCI All Country World Gross Total Return Index	5.00
BoAML German Government 1-10 Year Index	5.00
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
BoAML 5-10 Year U.S. Treasury Index	3.00
BoAML 1-5 Year U.K. Gilt Index	3.00
BoAML U.S. High Yield Constrained Index	2.50
BoAML 1-5 Year Australian Governments Index	2.50
S&P Leveraged Loan Index	2.50
BoAML 0-3 Month U.S. Treasury Bill Index	2.00
BoAML 1-5 Year Canada Government Index	1.50
BoAML 20+ Year Canada Government Index	0.50
Total	100.00 %

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 March 31, 2018, the benchmark return index had an average credit quality of “Aa2” by Moody’s Investors Service (“Moody’s”), and an estimated duration of 3.17 years.

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COMMENT ON NON-GAAP FINANCIAL MEASURES

Throughout this filing, we present our operations in the way we believe will be the most meaningful and useful to investors, analysts, rating agencies and others who use our financial information in evaluating the performance of our company. This presentation includes the use of after-tax operating income available to Arch common shareholders, which is defined as net income available to Arch common shareholders, excluding net realized gains or losses, net impairment losses recognized in earnings, equity in net income or loss of investment funds accounted for using the equity method, net foreign exchange gains or losses, UGC transaction costs and other, 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 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, UGC 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. UGC 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 UGC 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, UGC 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 5, "Segment Information," of the notes accompanying our consolidated financial statements, they are considered non-GAAP financial measures when presented elsewhere on a consolidated basis. The reconciliations of underwriting income or loss to income before income taxes (the most directly comparable GAAP financial measure) on a consolidated basis and a subtotal before the contribution from the ‘other’ segment, in accordance with Regulation G, is shown in Note 5, “Segment Information” 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 interest entity and we concluded that we are the primary beneficiary of Watford Re. As such, we consolidate the results of Watford Re in our consolidated financial statements, although we only own approximately 11% of Watford Re’s common equity. Watford Re has its own management and board of directors that is responsible for its overall profitability. In addition, we do not guarantee or provide credit support for Watford Re. Since Watford Re is an independent company, the assets of Watford Re can be used only to settle obligations of Watford Re and Watford Re is solely responsible for its own liabilities and commitments. Our financial exposure to Watford Re is limited to our investment in Watford Re’s common and preferred shares and counterparty credit risk (mitigated by collateral) arising from the reinsurance transactions. We believe that presenting certain information excluding the ‘other’ segment enables investors and other users of our financial information to analyze our performance in a manner similar to how our management analyzes performance.

Our presentation of segment information includes the use of a current year loss ratio which excludes favorable or adverse development in prior year loss reserves. This ratio is a non-GAAP financial measure as defined in Regulation G. The reconciliation of such measure to the loss ratio (the most directly comparable GAAP financial measure) in accordance with Regulation G is shown on the individual segment pages. Management utilizes the current year loss ratio in its analysis of the underwriting performance of each of our underwriting segments.
Total return on investments includes investment income, equity in net income or loss of investment funds accounted for using the equity method, net realized gains and losses and the change in unrealized gains and losses generated by Arch’s investment portfolio. Total return is calculated on a pre-tax basis and before investment expenses, excludes amounts reflected in the ‘other’

segment, and reflects the effect of financial market conditions along with foreign currency fluctuations. In addition, total return incorporates the timing of investment returns during the periods. There is no directly comparable GAAP financial measure for total return. Management uses total return on investments as a key measure of the return generated to Arch common shareholders on the capital held in the business, and compares the return generated by our investment portfolio against benchmark returns which we measured our portfolio against during the periods.

RESULTS OF OPERATIONS

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

	Three Months Ended March 31,	
	2018	2017
Net income available to Arch common shareholders	$137,276	$241,909
Net realized (gains) losses	111,764	(29,134)
Net impairment losses recognized in earnings	162	1,807

Equity in net (income) loss of investment funds accounted for using the equity method	(28,069)	(48,088)
Net foreign exchange (gains) losses	15,556	19,796
UGC transaction costs and other	830	15,584
Loss on redemption of preferred shares	2,710	—
Income tax expense (benefit) (1)	(5,086)	(3,909)
After-tax operating income available to Arch common shareholders	$235,143	$197,965
Beginning common shareholders’ equity	$8,324,047	$7,481,163
Ending common shareholders’ equity	8,370,372	7,833,289
Average common shareholders’ equity	$8,347,210	$7,657,226
Annualized return on average common equity %	6.6	12.6
Annualized operating return on average common equity %	11.3	10.3

(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, UGC 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 table sets forth our insurance segment's underwriting results:

	Three Months Ended March 31,		
	2018	2017	% Change
Gross premiums written	$823,378	$782,281	5.3
Premiums ceded	(247,180)	(234,095)	
Net premiums written	576,198	548,186	5.1
Change in unearned premiums	(37,461)	(42,540)	
Net premiums earned	538,737	505,646	6.5
Losses and loss adjustment expenses	(353,730)	(332,641)	
Acquisition expenses	(85,169)	(74,868)	
Other operating expenses	(91,974)	(88,126)	
Underwriting income	$7,864	$10,011	(21.4)
Underwriting Ratios			% Point Change
Loss ratio	65.7%	65.8%	(0.1)
Acquisition expense ratio	15.8%	14.8%	1.0
Other operating expense ratio	17.1%	17.4%	(0.3)
Combined ratio	98.6%	98.0%	0.6

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

- Construction and national accounts: primary and excess casualty coverages to middle and large accounts in the construction industry and a wide range of products for middle and large national accounts, specializing in loss sensitive primary casualty insurance programs (including large deductible, self-insured retention and retrospectively rated programs).
- Excess and surplus casualty: primary and excess casualty insurance coverages, including middle market energy business, and contract binding, which primarily provides casualty coverage through a network of appointed agents to small and medium risks.
- Lenders products: collateral protection, debt cancellation and service contract reimbursement products to banks, credit unions, automotive dealerships and original equipment manufacturers and other specialty programs that pertain to automotive lending and leasing.
- Professional lines: directors' and officers' liability, errors and omissions liability, employment practices liability, fiduciary liability, crime, professional indemnity and other financial related coverages for corporate, private equity,

venture capital, real estate investment trust, limited partnership, financial institution and not-for-profit clients of all sizes and medical professional and general liability insurance coverages for the healthcare industry. The business is predominately written on a claims-made basis.

•Programs: primarily package policies, underwriting workers' compensation and umbrella liability business in support of desirable package programs, targeting program managers with unique expertise and niche products offering general liability, commercial automobile, inland marine and property business with minimal catastrophe exposure.

•Property, energy, marine and aviation: primary and excess general property insurance coverages, including catastrophe-exposed property coverage, for commercial clients. Coverages for marine include hull, war, specie and liability. Aviation and stand alone terrorism are also offered.

•Travel, accident and health: specialty travel and accident and related insurance products for individual, group travelers, travel agents and suppliers, as well as accident and health, which provides accident, disability and medical plan insurance coverages for employer groups, medical plan members, students and other participant groups.

•Other: includes alternative market risks (including captive insurance programs), excess workers' compensation and employer's liability insurance coverages for qualified self-insured groups, associations and trusts, and contract and commercial surety coverages, including contract bonds (payment and performance bonds) primarily for medium and large contractors and commercial surety bonds for Fortune 1,000 companies and smaller transaction business programs.

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Premiums Written.

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

	Three Months Ended March 31,			
	2018		2017	
	Amount	%	Amount	%
Professional lines	$119,789	20.8	$108,468	19.8
Construction and national accounts	98,428	17.1	99,977	18.2
Programs	96,556	16.8	99,957	18.2
Travel, accident and health	80,524	14.0	65,528	12.0
Property, energy, marine and aviation	52,127	9.0	40,104	7.3
Excess and surplus casualty	41,922	7.3	45,832	8.4
Lenders products	21,984	3.8	24,705	4.5
Other	64,868	11.3	63,615	11.6
Total	$576,198	100.0	$548,186	100.0

Gross premiums written by the insurance segment in the 2018 first quarter were 5.3% higher than in the 2017 first quarter, while net premiums written were 5.1% higher than in the 2017 first quarter. Changes in foreign currency rates resulted in an increase in net premiums written in the 2018 first quarter of $10.3 million, or 1.9%, compared to the 2017 first quarter. The increase in net premiums written reflected growth in travel, through both new business and growth in existing accounts, in property, primarily due to improved rates and new business, and in professional lines, reflecting increases in small and medium sized accounts.

Net Premiums Earned.

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

	Three Months Ended March 31,			
	2018		2017	
	Amount	%	Amount	%
Professional lines	$116,018	21.5	$108,638	21.5
Construction and national accounts	77,212	14.3	77,423	15.3
Programs	95,011	17.6	85,180	16.8
Travel, accident and health	66,835	12.4	58,481	11.6
Property, energy, marine and aviation	48,603	9.0	38,078	7.5
Excess and surplus casualty	46,544	8.6	51,007	10.1
Lenders products	22,816	4.2	24,099	4.8
Other	65,698	12.2	62,740	12.4
Total	$538,737	100.0	$505,646	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 first quarter were 6.5% higher than in the 2017 first quarter.

Losses and Loss Adjustment Expenses.

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

	Three Months Ended March 31,	
	2018	2017
Current year	66.1 %	66.2 %
Prior period reserve development	(0.4)%	(0.4)%
Loss ratio	65.7 %	65.8 %

Current Year Loss Ratio.

The insurance segment's current year loss ratio in the 2018 first quarter was 0.1 points lower than in the 2017 first quarter and reflected 0.2 points of current year catastrophic activity, compared to 0.5 points in the 2017 first quarter.

Prior Period Reserve Development.

The insurance segment's net favorable development was $2.1 million, or 0.4 points, for the 2018 first quarter, compared to $2.1 million, or 0.4 points, for the 2017 first quarter. See note 6, "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.

The insurance segment's underwriting expense ratio was 32.9% in the 2018 first quarter, compared to 32.2% in the 2017 first 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.

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Reinsurance Segment

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

	Three Months Ended March 31,		
	2018	2017	% Change
Gross premiums written	$577,483	$475,782	21.4
Premiums ceded	(195,730)	(166,092)	
Net premiums written	381,753	309,690	23.3
Change in unearned premiums	(102,581)	(64,839)	
Net premiums earned	279,172	244,851	14.0
Other underwriting income	1,232	(306)	
Losses and loss adjustment expenses	(141,675)	(105,454)	
Acquisition expenses	(48,319)	(46,147)	
Other operating expenses	(35,571)	(37,533)	
Underwriting income	$54,839	$55,411	(1.0)
Underwriting Ratios			% Point Change
Loss ratio	50.7 %	43.1 %	7.6
Acquisition expense ratio	17.3 %	18.8 %	(1.5)
Other operating expense ratio	12.7 %	15.3 %	(2.6)
Combined ratio	80.7 %	77.2 %	3.5

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

•Casualty: provides coverage to ceding company clients on third party liability and workers' compensation exposures from ceding company clients, primarily on a treaty basis. Exposures include, among others, executive assurance, professional liability, workers' compensation, excess and umbrella liability, excess motor and healthcare business.

•Marine and aviation: provides coverage for energy, hull, cargo, specie, liability and transit, and aviation business, including airline and general aviation risks. Business written may also include space business, which includes coverages for satellite assembly, launch and operation for commercial space programs.

•Other specialty: provides coverage to ceding company clients for proportional motor and other lines, including surety, accident and health, workers' compensation catastrophe, agriculture, trade credit and political risk.

•Property catastrophe: provides protection for most catastrophic losses that are covered in the underlying policies written by reinsureds, including hurricane, earthquake, flood, tornado, hail and fire, and coverage for other perils on a case-by-case basis. Property catastrophe reinsurance provides coverage on an excess of loss basis when aggregate losses and loss adjustment expense from a single occurrence or aggregation of losses from a covered peril exceed the retention specified in the contract.

•Property excluding property catastrophe: provides coverage for both personal lines and commercial property exposures and principally covers buildings, structures, equipment and contents. The primary perils in this business include fire, explosion, collapse, riot, vandalism, wind, tornado, flood and earthquake. Business is assumed on both a proportional and excess of loss basis. In addition, facultative business is written which focuses on individual commercial property risks on an excess of loss basis.

•Other: includes life reinsurance business on both a proportional and non-proportional basis, casualty clash business and, in limited instances, non-traditional business which is intended to provide insurers with risk management solutions that complement traditional reinsurance.

Premiums Written.

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

	Three Months Ended March 31,	
	2018	2017

	Amount	%	Amount	%
Other specialty	$138,992	36.4	$114,418	36.9
Casualty	130,176	34.1	110,620	35.7
Property excluding property catastrophe	85,170	22.3	75,387	24.3
Marine and aviation	10,012	2.6	9,541	3.1
Property catastrophe	7,632	2.0	(7,477)	(2.4)
Other	9,771	2.6	7,201	2.3
Total	$381,753	100.0	$309,690	100.0
Pro rata	$152,165	39.9	$129,016	41.7
Excess of loss	229,588	60.1	180,674	58.3
Total	$381,753	100.0	$309,690	100.0

Gross premiums written by the reinsurance segment in the 2018 first quarter were 21.4% higher than in the 2017 first quarter, while net premiums written were 23.3% higher than in the 2017 first quarter. Changes in foreign currency rates resulted in an increase in net premiums written in the 2018 first quarter of $22.4 million, or 7.2%, compared to the 2017 first quarter. The increase in net premiums written reflected growth in international motor contracts.

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Net Premiums Earned.

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

	Three Months Ended March 31,			
	2018		2017	
	Amount	%	Amount	%
Other specialty	$103,717	37.2	$69,965	28.6
Casualty	69,372	24.8	72,968	29.8
Property excluding property catastrophe	68,754	24.6	69,852	28.5
Marine and aviation	9,389	3.4	9,490	3.9
Property catastrophe	18,387	6.6	16,177	6.6
Other	9,553	3.4	6,399	2.6
Total	$279,172	100.0	$244,851	100.0
Pro rata	$163,996	58.7	$133,092	54.4
Excess of loss	115,176	41.3	111,759	45.6
Total	$279,172	100.0	$244,851	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 first quarter, net premiums earned were 14.0% higher than in the 2017 first quarter, and reflect the retroactive reinsurance contract and reinstatement premium impacts discussed above as well as in net premiums written over the previous five quarters.

Other Underwriting Income (Loss).

Other underwriting income (loss) for the 2018 first quarter was $1.2 million, compared to $(0.3) million for the 2017 first quarter.

Losses and Loss Adjustment Expenses.

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

	Three Months Ended March 31,	
	2018	2017
Current year	63.8 %	66.5 %
Prior period reserve development	(13.1)%	(23.4)%
Loss ratio	50.7 %	43.1 %

Current Year Loss Ratio.

The reinsurance segment's current year loss ratio in the 2018 first quarter was 2.7 points lower than in the 2017 first quarter and reflected 0.4 points of current year catastrophic activity, compared to 4.0 points in the 2017 first quarter. The balance of the change in the 2018 first quarter current year loss ratio resulted, in part, from the effects of a higher level of large loss activity than in the 2017 first quarter.

Prior Period Reserve Development.

The reinsurance segment's net favorable development was $36.5 million, or 13.1 points, for the 2018 first quarter, compared to $57.2 million, or 23.4 points, for the 2017 first quarter. See note 6, "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.

The underwriting expense ratio for the reinsurance segment was 30.0% in the 2018 first quarter, compared to 34.1% in the 2017 first quarter. 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 in the 2018 first quarter. The underwriting expense ratio benefited from a reduction in federal excise taxes incurred of $2.5 million, or 0.9 points, as the reinsurance agreements between the Company's U.S.-based property casualty insurance and reinsurance subsidiaries and Arch Reinsurance Ltd. ("Arch Re Bermuda") were canceled on a cutoff basis as of January 1, 2018.

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.

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The following table sets forth our mortgage segment's underwriting results.

	Three Months Ended March 31,		
	2018	2017	% Change
Gross premiums written	$321,178	$348,623	(7.9)
Premiums ceded	(46,137)	(73,925)	
Net premiums written	275,041	274,698	0.1
Change in unearned premiums	5,201	(30,175)	
Net premiums earned	280,242	244,523	14.6
Other underwriting income	3,416	4,123	
Losses and loss adjustment expenses	(43,466)	(29,065)	
Acquisition expenses	(26,567)	(28,766)	
Other operating expenses	(38,771)	(41,870)	
Underwriting income	$174,854	$148,945	17.4
Underwriting Ratios			% Point Change
Loss ratio	15.5 %	11.9 %	3.6
Acquisition expense ratio	9.5 %	11.8 %	(2.3)
Other operating expense ratio	13.8 %	17.1 %	(3.3)
Combined ratio	38.8 %	40.8 %	(2.0)

Premiums Written.

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

	Three Months Ended March 31,			
	2018		2017	
	Amount	%	Amount	%
Client location:				
United States	$246,548	89.6	$241,136	87.8
Other	28,493	10.4	33,562	12.2
Total	$275,041	100.0	$274,698	100.0
Underwriting location:				
United States	$221,177	80.4	$216,729	78.9
Other	53,864	19.6	57,969	21.1
Total	$275,041	100.0	$274,698	100.0

Gross premiums written by the mortgage segment in the 2018 first quarter were 7.9% lower than in the 2017 first quarter. 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 2018 first quarter reflected a declining cession to AIG on the 50% quota share reinsurance agreement covering 2014 to 2016 policy years of UGC business on a run-off basis, while the 2017 first quarter 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 81.7% at March 31, 2018, compared to 81.8% at December 31, 2017.

Arch MI U.S. generated $11.4 billion of new insurance written ("NIW") in the 2018 first quarter, compared to $12.7 billion in the 2017 first quarter, with a decrease in the origination market and a decline in single premium and other business with high risk attributes. NIW represents the original principal balance of all loans that received coverage during the period. Monthly premium policies contributed 91.4% of NIW in the 2018 first quarter, compared to 81.9%

for the 2017 first quarter.

The following table provides details on the NIW generated by Arch MI U.S.:

(U.S. Dollars in millions)	Three Months Ended March 31,			
	2018		2017	
	Amount	%	Amount	%
Total new insurance written (NIW) (1)	$11,373		$12,660	
Credit quality (FICO):				
>=740	$6,612	58.1	$7,184	56.7
680-739	4,042	35.5	4,615	36.5
620-679	719	6.3	861	6.8
Total	$11,373	100.0	$12,660	100.0
Loan-to-value (LTV):				
95.01% and above	$1,262	11.1	$972	7.7
90.01% to 95.00%	5,136	45.2	5,985	47.3
85.01% to 90.00%	3,643	32.0	4,061	32.1
85.01% and below	1,332	11.7	1,642	13.0
Total	$11,373	100.0	$12,660	100.0
Monthly vs. single:				
Monthly	$10,390	91.4	$10,368	81.9
Single	983	8.6	2,292	18.1
Total	$11,373	100.0	$12,660	100.0
Purchase vs. refinance:				
Purchase	$10,288	90.5	$10,720	84.7
Refinance	1,085	9.5	1,940	15.3
Total	$11,373	100.0	$12,660	100.0

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

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

	Three Months Ended March 31,			
	2018		2017	
	Amount	%	Amount	%
Client Location:				
United States	$265,685	94.8	$236,031	96.5
Other	14,557	5.2	8,492	3.5
Total	$280,242	100.0	$244,523	100.0
Underwriting location:				
United States	$238,141	85.0	$208,699	85.3
Other	42,101	15.0	35,824	14.7
Total	$280,242	100.0	$244,523	100.0

Net premiums earned for the 2018 first quarter were higher than in the 2017 first quarter, 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 $3.4 million for the 2018 first quarter, compared to $4.1 million for the 2017 first quarter.
Losses and Loss Adjustment Expenses.
The table below shows the components of the mortgage segment's loss ratio:

	Three Months Ended March 31,	
	2018	2017
Current year	20.1 %	21.5 %
Prior period reserve development	(4.6)%	(9.6)%
Loss ratio	15.5 %	11.9 %

Current Year Loss Ratio.
The mortgage segment's current year loss ratio was 1.4 points lower in the 2018 first quarter than in the 2017 first quarter. The current year loss ratio for the 2018 first quarter reflects the current macroeconomic environment and growth in insurance in force, along with changes in the mix of business.
Prior Period Reserve Development.
The mortgage segment's net favorable development was $13.0 million, or 4.6 points, for the 2018 first quarter, compared to $23.6 million, or 9.6 points, for the 2017 first quarter. See note 6, "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.
The underwriting expense ratio for the mortgage segment was 23.3% in the 2018 first quarter, compared to 28.9% in the 2017 first quarter. The lower underwriting expense ratio in the 2018 first quarter 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, UGC 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 March 31,	
	2018	2017
Fixed maturities	$92,438	$82,781
Equity securities	2,750	2,966
Short-term investments	3,949	1,441
Other (1)	19,229	21,234
Gross investment income	118,366	108,422
Investment expenses (2)	(18,123)	(12,610)
Net investment income	$100,243	$95,812

(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 0.38% of average invested assets for the 2018 first quarter, compared to 0.28% for the 2017 first quarter.

The higher level of net investment income for the 2018 first 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 2.13% for the 2018 first quarter, consistent with the 2.13% for the 2017 first quarter.

Corporate Expenses.

Corporate expenses were $14.5 million for the 2018 first quarter, compared to $12.2 million for the 2017 first quarter. The higher level of corporate expenses in the 2018 first quarter was primarily due to higher incentive compensation costs.

UGC Transaction Costs and Other.

UGC transaction costs and other were $0.8 million for the 2018 first quarter, compared to $15.6 million for the 2017 first quarter. Amounts for the 2018 first quarter primarily related to severance and related costs, while the total for the 2017 first quarter included 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 first quarter was $26.7 million, compared to $31.3 million for the 2017 first quarter, with amounts in both periods primarily related to intangible assets related to the UGC acquisition.

Interest Expense.

Interest expense was $25.9 million for the 2018 first quarter, consistent with the $25.8 million for the 2017 first quarter.

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 $111.9 million for the 2018 first quarter, compared to net realized gains of $28.5 million for the 2017 first quarter. 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.

Net Impairment Losses Recognized in Earnings.

We recorded $0.2 million of impairment losses for the 2018 first quarter, compared to $1.8 million for the 2017 first quarter. See note 7, "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 $28.1 million of equity in net income related to investment funds accounted for using the equity method in the 2018 first quarter, compared to $48.1 million of income for the 2017 first quarter. Investment funds accounted for using the equity method totaled $1.39 billion at March 31, 2018, compared to $1.04 billion at December 31, 2017.

Net Foreign Exchange Gains or Losses.

Net foreign exchange losses for the 2018 first quarter were $15.0 million, compared to net foreign exchange losses for the 2017 first quarter of $19.8 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 12.8% for the 2018 first quarter, compared to an expense of 10.2% for the 2017 first quarter. The effective tax rates for the 2018 first quarter included a discrete income tax benefit of $1.4 million related to 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 first quarter as compared to the 2017 first quarter.

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 3, "Variable Interest Entities and Noncontrolling Interests" and note 5, "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 2, "Recent Accounting Pronouncements."

FINANCIAL CONDITION

Investable Assets

At March 31, 2018, total investable assets held by Arch were $19.79 billion, excluding the $2.49 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
March 31, 2018		
Fixed maturities (2)	$14,953,447	75.6
Short-term investments	989,487	5.0
Cash	626,838	3.2
Equity securities (2)	620,704	3.1
Other investments (2)	1,239,063	6.3
Investments accounted for using the equity method	1,394,548	7.0
Securities transactions entered into but not settled at the balance sheet date	(33,289)	(0.2)
Total investable assets held by Arch	$19,790,798	100.0
December 31, 2017		
Fixed maturities (2)	$14,798,213	75.1
Short-term investments	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

(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.

At March 31, 2018, our fixed income portfolio, which includes fixed maturity securities and short-term investments, had average credit quality ratings from Standard & Poor's Rating

Services ("S&P")/Moody's of "AA-/Aa3" and an average yield to maturity (embedded book yield), before investment expenses, of 2.50%. At December 31, 2017, our fixed income portfolio had average credit quality ratings from S&P/Moody's of "AA-/Aa2" and an average yield to maturity of 2.32%. Our investment portfolio had an average effective duration of 2.60 years at March 31, 2018, compared to 2.83 years at December 31, 2017. At March 31, 2018, approximately $13.73 billion, or 69%, of total investable assets held by Arch were internally managed, compared to $13.73 billion, or 70%, at December 31, 2017.

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

	Estimated Fair Value	% of Total
March 31, 2018		
Corporate bonds	$5,705,157	38.2
Mortgage backed securities	351,059	2.3
Municipal bonds	1,553,616	10.4
Commercial mortgage backed securities	561,543	3.8
U.S. government and government agencies	2,966,962	19.8
Non-U.S. government securities	1,694,587	11.3
Asset backed securities	2,120,523	14.2
Total	$14,953,447	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

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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
March 31, 2018		
U.S. government and gov't agencies (1)	$3,280,853	21.9
AAA	4,076,660	27.3
AA	2,211,254	14.8
A	3,079,753	20.6
BBB	1,426,818	9.5
BB	312,169	2.1
B	249,346	1.7
Lower than B	71,922	0.5
Not rated	244,672	1.6
Total	$14,953,447	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.

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
March 31, 2018			
0-10%	$11,628,855	$(178,583)	91.7
10-20%	103,563	(15,690)	8.1
20-30%	889	(306)	0.2
Greater than 30%	308	(205)	0.1
Total	$11,733,615	$(194,784)	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 March 31, 2018, excluding guaranteed amounts and covered bonds:

	Estimated Fair Value	Credit Rating (1)
Apple Inc.	$204,965	AA+/Aa1
Citigroup Inc.	163,338	A/A2
Wells Fargo & Company	139,976	A/A1
Bank of America Corporation	133,671	A-/A3
JPMorgan Chase & Co.	121,339	A-/A3
Philip Morris International Inc.	105,763	A/A2
Toyota Motor Corporation	95,984	AA-/Aa3
Oracle Corporation	92,950	AA-/A1
Daimler AG	90,303	A/A2
Morgan Stanley	88,180	BBB+/A3
Total	$1,236,469	

(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
March 31, 2018				
RMBS	$313,069	$5,339	$ 32,651	$351,059
CMBS	822	484,884	75,837	561,543
ABS	—	2,040,126	80,397	2,120,523
Total	$313,891	$2,530,349	$ 188,885	$3,033,125
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 March 31, 2018, our structured securities included $42.0 million par value in sub-prime securities with a fair value of $34.1 million and average credit quality ratings from S&P/Moody's of "CCC/Caa3." At December 31, 2017, our fixed income portfolio included $42.3 million par value in sub-prime securities with a fair value of $35.4 million and average credit quality ratings from S&P/Moody's of "CCC/Caa3."

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The following table provides information on the fair value of our Eurozone investments at March 31, 2018:

Country (1)	Sovereign (2)	Corporate Bonds	Other (3)	Total
Netherlands	$109,786	$129,999	$19,881	$259,666
Germany	138,805	3,122	50,260	192,187
Belgium	117,985	9,203	1,230	128,418
France	30,531	16,305	41,924	88,760
Luxembourg	—	16,196	15,517	31,713
Austria	21,988	—	—	21,988
Spain	—	1,874	10,442	12,316
Ireland	—	7,113	3,404	10,517
Greece	2,011	—	5,404	7,415
Finland	3,770	—	—	3,770
Italy	—	2,046	1,698	3,744
Portugal	—	—	981	981
Total	$424,876	$185,858	$150,741	$761,475

(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 March 31, 2018.

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

(3) Includes bank loans, equities and other.

At March 31, 2018, our investment portfolio included $620.7 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.

The following table summarizes our other investments:

	March 31, 2018	December 31, 2017
Asian and emerging markets	$290,249	$ 344,068
Term loan investments	270,287	326,085
Mezzanine debt funds	234,078	252,160
Credit related funds	205,303	193,787
Investment grade fixed income	106,744	156,225
Other (1)	132,402	204,635
Total	$1,239,063	$ 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 9, "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 8, "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:

	March 31, 2018	December 31, 2017
Investments accounted for using the fair value option:		
Other investments	$940,646	$924,410
Fixed maturities	1,096,553	1,177,033
Short-term investments	184,997	256,755
Equity securities	109,198	67,868
Total	2,331,394	2,426,066
Fixed maturities available for sale, at fair value	203,176	—
Cash	54,053	54,503
Securities sold but not yet purchased	(63,110)	(34,375)
Securities transactions entered into but not settled at the balance sheet date	(32,218)	(6,127)
Total investable assets included in ‘other’ segment	$2,493,295	$2,440,067

Premiums Receivable and Reinsurance Recoverables

At March 31, 2018, 82.0% of premiums receivable of $1.38 billion represented amounts not yet due, while amounts in excess of 90 days overdue were 3.8% 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 $26.9 million at March 31, 2018, compared to $25.3 million at December 31, 2017.

At March 31, 2018 and December 31, 2017, approximately 70.8% and 69.9% of reinsurance recoverables on paid and unpaid losses (not including ceded unearned premiums) of $2.51 billion and $2.54 billion, respectively, were due from carriers which had an A.M. Best rating of “A-” or better while 29.2% 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 March 31, 2018 and December 31, 2017. The largest reinsurance recoverables from any one carrier was approximately 2.2% and 2.2%,

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respectively, of total shareholders' equity available to Arch at March 31, 2018 and December 31, 2017. Approximately 2.4% of the $63.1 million of paid losses and loss adjustment expenses recoverable at March 31, 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 March 31, 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 March 31,	
	2018	2017
Premiums written:		
Direct	$1,200,362	$1,096,755
Assumed	637,852	561,235
Ceded	(425,670)	(381,730)
Net	$1,412,544	$1,276,260
Premiums earned:		
Direct	$1,147,676	$1,023,452
Assumed	445,969	416,345
Ceded	(358,746)	(322,780)
Net	$1,234,899	$1,117,017
Losses and LAE:		
Direct	$568,466	$507,118
Assumed	220,310	186,956
Ceded	(151,916)	(141,504)
Net	$636,860	$552,570

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 March 31, 2018 and December 31, 2017, our Loss Reserves, net of unpaid losses and loss adjustment expenses recoverable and deferred reinsurance charge asset, by type and by operating segment were as follows:

	March 31, 2018	December 31, 2017
Insurance segment:		
Case reserves	$1,631,601	$ 1,648,910
IBNR reserves	3,328,267	3,272,351
Total net reserves	4,959,868	4,921,261
Reinsurance segment:		
Case reserves	1,070,697	1,033,413
Additional case reserves	159,448	158,377
IBNR reserves	1,504,617	1,499,962
Total net reserves	2,734,762	2,691,752

Mortgage segment:		
Case reserves	435,109	443,069
IBNR reserves	110,348	104,169
Total net reserves (1)	545,457	547,238
Other segment:		
Case reserves	289,387	260,876
Additional case reserves	31,661	32,587
IBNR reserves	488,080	465,168
Total net reserves	809,128	758,631
Total:		
Case reserves	3,426,794	3,386,268
Additional case reserves	191,109	190,964
IBNR reserves	5,431,312	5,341,650
Total net reserves	$9,049,215	$ 8,918,882

(1) At March 31, 2018, total net reserves include $469.1 million from U.S. primary mortgage insurance business, of which 77.6% 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. primary mortgage insurance business, of which 79.8% represents policy years 2008 and prior and the remainder from later policy years.

At March 31, 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:

	March 31, 2018	December 31, 2017
Insurance segment:		
Professional lines (1)	$1,319,534	$ 1,308,261
Construction and national accounts	1,112,173	1,094,300
Excess and surplus casualty (2)	677,515	672,903
Programs	651,536	644,340
Property, energy, marine and aviation	414,820	437,518
Travel, accident and health	86,533	86,122
Lenders products	50,084	53,912
Other (3)	647,673	623,905
Total net reserves	$4,959,868	$ 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.

At March 31, 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 and including deferred reinsurance charge asset, were as follows:

	March 31, 2018	December 31, 2017
Reinsurance segment:		
Casualty (1)	$1,511,819	$ 1,489,933
Other specialty (2)	555,493	523,321
Property excluding property catastrophe (3)	368,674	376,020
Marine and aviation	132,673	135,484
Property catastrophe	99,926	98,622
Other (4)	66,177	68,372
Total net reserves	$2,734,762	$ 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 the end of the last two quarters:

(U.S. Dollars in millions)	March 31, 2018		December 31, 2017	
	Amount	%	Amount	%
Insurance In Force (IIF) (1):				
U.S. primary mortgage insurance	$255,092	72.9	$253,914	72.2
Mortgage reinsurance	27,531	7.9	28,017	8.0
Other (2)	67,252	19.2	69,905	19.9
Total	$349,875	100.0	$351,836	100.0
Risk In Force (RIF) (3):				
U.S. primary mortgage insurance	$65,235	92.2	$64,904	92.3
Mortgage reinsurance	2,383	3.4	2,473	3.5
Other (2)	3,117	4.4	2,921	4.2
Total	$70,735	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 March 31, 2018:

(U.S. Dollars in millions)	IIF Amount	%	RIF Amount	%	Delinquency Rate (1)	
Policy year:						
2008 and prior	$24,970	9.8	$5,701	8.7	9.40	%
2009	989	0.4	232	0.4	2.71	%
2010	931	0.4	254	0.4	2.37	%

2011	3,560	1.4	975	1.5	1.30	%
2012	12,414	4.9	3,408	5.2	0.71	%
2013	20,640	8.1	5,686	8.7	0.90	%
2014	21,708	8.5	5,815	8.9	1.01	%
2015	39,960	15.7	10,343	15.9	0.71	%
2016	60,028	23.5	15,197	23.3	0.76	%
2017	58,584	23.0	14,802	22.7	0.36	%
2018	11,308	4.4	2,822	4.3	0.01	%
Total	$255,092	100.0	$65,235	100.0	1.98	%

(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 the end of the last two quarters:

(U.S. Dollars in millions)	March 31, 2018		December 31, 2017	
	Amount	%	Amount	%
Credit quality (FICO):				
>=740	$37,974	58.2	$37,794	58.2
680-739	21,438	32.9	21,213	32.7
620-679	5,117	7.8	5,159	7.9
<620	706	1.1	738	1.1
Total	$65,235	100.0	$64,904	100.0
Weighted average FICO score	743		743	
Loan-to-value (LTV):				
95.01% and above	$6,441	9.9	$6,337	9.8
90.01% to 95.00%	36,387	55.8	36,174	55.7
85.01% to 90.00%	19,490	29.9	19,482	30.0
85.00% and below	2,917	4.5	2,911	4.5
Total	$65,235	100.0	$64,904	100.0
Weighted average LTV	92.9 %		92.9 %	
Total RIF, net of external reinsurance	$49,921		$49,100	

(U.S. Dollars in millions)	March 31, 2018		December 31, 2017	
	Amount	%	Amount	%
Total RIF by State:				
Texas	$5,164	7.9	$5,151	7.9
California	3,859	5.9	3,803	5.9
Florida	2,977	4.6	2,881	4.4
Virginia	2,786	4.3	2,773	4.3
North Carolina	2,420	3.7	2,410	3.7
Georgia	2,358	3.6	2,331	3.6
Washington	2,261	3.5	2,294	3.5
Illinois	2,252	3.5	2,229	3.4
Maryland	2,244	3.4	2,234	3.4
Minnesota	2,172	3.3	2,165	3.3
Others	36,742	56.3	36,633	56.4
Total	$65,235	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)	Three Months Ended March 31, 2018	December 31, 2017
Roll-forward of insured loans in default:		
Beginning delinquent number of loans	27,068	23,770
New notices (1)	9,640	14,097
Cures	(11,592)	(9,737)
Paid claims	(1,054)	(1,062)

Ending delinquent number of loans (1)(2)	24,062	27,068
Ending number of policies in force (2)	1,214,539	1,213,382
Delinquency rate (1)(2)	1.98 %	2.23 %
Losses:		
Number of claims paid	1,054	1,062
Total paid claims	$47,645	$ 49,769
Average per claim	$45.2	$ 46.9
Severity (3)	105.2 %	103.2 %
Average reserve per default (in thousands)	$18.3	$ 16.5

(1) There were no incremental new notices in the 2018 first quarter and 2,400 ending delinquent loans at March 31, 2018 from areas impacted by the 2017 third quarter hurricanes. The 2017 fourth quarter included approximately 3,700 incremental new notices and 3,200 ending delinquent loans at December 31, 2017 from areas impacted by 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 10.5 to 1 at March 31, 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 $9.15 billion at March 31, 2018, compared to $9.20 billion at December 31, 2017. The decrease was primarily attributable to negative investment returns for the quarter, partially offset by strong underwriting results.

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

(U.S. dollars in thousands, except share data)	March 31, 2018	December 31, 2017
Total shareholders' equity available to Arch	$ 9,150,372	$ 9,196,602
Less preferred shareholders' equity	780,000	872,555
Common shareholders' equity available to Arch	$ 8,370,372	$ 8,324,047
Common shares and common share equivalents outstanding, net of treasury shares (1)	136,682,422	136,652,139
Book value per share	$ 61.24	$ 60.91

(1) Excludes the effects of 6,612,575 and 6,590,058 stock options and 304,431 and 304,496 restricted stock units outstanding at March 31, 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 three months ended March 31, 2018, Arch Capital received dividends of $36.2 million from Arch Re Bermuda, our Bermuda-based reinsurer and insurer, which can pay approximately $2.13 billion to Arch Capital during the remainder of 2018 without providing an affidavit to the Bermuda Monetary Authority ("BMA").

For the three months ended March 31, 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.

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 3, "Variable Interest Entities and Noncontrolling Interests," for cash flows related to Watford Re.

	Three Months Ended March 31, 2018	2017
Total cash provided by (used for):		
Operating activities	$370,261	$121,734
Investing activities	(22,475)	(59,574)
Financing activities	(272,994)	(198,961)
Effects of exchange rate changes on foreign currency cash	776	2,617
Increase (decrease) in cash and restricted cash	$75,568	$(134,184)

- Cash provided by operating activities for the three months ended March 31, 2018 reflected a higher level of premiums collected than in the 2017 period and an income tax refund, while the 2017 period reflected higher purchases of tax and loss bonds and outflows related to the UGC acquisition.
- Cash used for investing activities for the three months ended March 31, 2018 was lower than in the 2017 period, reflecting changes in cash collateral related to securities lending. In addition, activity for the 2018 period reflected higher net purchases of fixed maturity investments than in the 2017 period, offset by a decrease in short-term investments.
- Cash used for financing activities for the three months ended March 31, 2018 was higher than in the 2017 period, and reflected a $92.6 million outflow related to redemption of our Series C preferred shares and $3.3 million of repurchases under our share repurchase program.

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.

At March 31, 2018, total capital available to Arch of $11.26 billion consisted of $1.73 billion of senior notes, representing 15.4% of the total, $375.0 million of revolving credit agreement

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borrowings due in October 2021, representing 3.3% of the total, $780.0 million of preferred shares, representing 6.9% of the total, and common shareholders' equity of $8.37 billion, representing 74.3% of the total. At December 31, 2017, total capital available to Arch of $11.30 billion consisted of $1.73 billion of senior notes, representing 15.3% of the total, $375.0 million of revolving credit agreement borrowings due in October 2021, representing 3.3% of the total, $872.6 million of preferred shares, representing 7.7% of the total, and common shareholders' equity of $8.32 billion, representing 73.6% of the total.

The following table provides an analysis of our capital structure:

(U.S. dollars in thousands, except share data)	Mar 31, 2018	Dec 31, 2017
Debt:		
Senior notes, due May 2034	$297,076	$297,053
Arch-U.S. senior notes, due Nov 2043 (1)	494,646	494,621
Arch Finance senior notes, due Dec 2026 (1)	496,135	496,043
Arch Finance senior notes, due Dec 2046 (1)	445,186	445,167
Revolving credit agreement borrowings due Oct 2021	375,000	375,000
Total	$2,108,043	$2,107,884
Shareholders' equity available to Arch:		
Series C non-cumulative preferred shares (2)	$—	$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	8,370,372	8,324,047
Total	$9,150,372	$9,196,602
Total capital available to Arch	$11,258,415	$11,304,486
Debt to total capital (%)	18.7	18.6
Debt and preferred to total capital (%)	25.7	26.4

(1) Fully and unconditionally guaranteed by Arch Capital.

(2) 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., a U.S. holding company. 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 and on their ability to distribute the earnings, loans or other payments from such subsidiaries 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 March 31, 2018 with an estimated PMIER sufficiency ratio of 133%, 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 in the 2018 first quarter 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 three months ended March 31, 2018, Arch Capital repurchased 39,405 shares under the share repurchase program with an aggregate purchase price of $3.3 million. From April 1, 2018 to May 9, 2018, Arch Capital repurchased 1,379,080 shares under the share repurchase program with an aggregate purchase price of $110.5 million. Since the inception of the share repurchase program through May 9, 2018, Arch Capital has repurchased approximately 126.6 million common shares for an aggregate purchase price of $3.80 billion. At May 9, 2018, approximately $332.7 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

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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 April 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 $477 million, followed by windstorms affecting the Gulf of Mexico and Florida Tri-County regions with net probable maximum pre-tax losses of $472 million and $437 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 April 1, 2018, our modeled peak zone earthquake exposure (Los Angeles earthquake) represented approximately 64% 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.

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 April 1, 2018, our modeled

RDS loss was less than 17% 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 March 31, 2018. Market risk represents the risk of changes in the fair value of a financial instrument and is 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

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counterparty credit risk (mitigated by collateral) arising from reinsurance transactions.

An analysis of material changes in market risk exposures at March 31, 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. 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
Mar 31, 2018					
Total fair value	$19.03	$18.78	$18.54	$18.30	$18.08
Change from base	2.6 %	1.3 %		(1.3)%	(2.5)%
Change in unrealized value	$0.48	$0.24		$(0.24)	$(0.46)
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
Mar 31, 2018					
Total fair value	$18.93	$18.75	$18.54	$18.34	$18.15
Change from base	2.1 %	1.1 %		(1.1)%	(2.1)%
Change in unrealized value	$0.39	$0.20		$(0.20)	$(0.39)
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 March 31, 2018, our portfolio's VaR was estimated to be 3.27% compared to an estimated 3.10% at December 31, 2017.

Equity Securities. At March 31, 2018 and December 31, 2017, the fair value of our investments in equity securities totaled $620.7 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 $62.1 million and $57.6 million at March 31, 2018 and December 31, 2017, respectively, and would have decreased book value per share by approximately $0.45 and $0.42, respectively. An immediate hypothetical 10% increase in the value of each position would increase the fair value of such investments by approximately $62.1 million and $57.6 million at March 31, 2018 and December 31, 2017, respectively, and would have increased book value per share by approximately $0.45 and $0.42, respectively.

Investment-Related Derivatives. At March 31, 2018, the notional value of all derivative instruments (excluding to-be-announced mortgage backed securities which are included in

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the fixed income securities analysis above and foreign currency forward contracts which are included in the foreign currency exchange risk analysis below) was $2.69 billion, compared to $2.44 billion at December 31, 2017. If the underlying exposure of each investment-related derivative held at March 31, 2018 depreciated by 100 basis points, it would have resulted in a reduction in net income of approximately $26.9 million, and a decrease in book value per share of approximately $0.20 per share, compared to $24.4 million and $0.18 per share, respectively, on investment-related derivatives held at December 31, 2017. If the underlying exposure of each investment-related derivative held at March 31, 2018 appreciated by 100 basis points, it would have resulted in an increase in net income of approximately $26.9 million, and an increase in book value per share of approximately $0.20 per share, compared to $24.4 million and $0.18 per share, respectively, on investment-related derivatives held at December 31, 2017. See note 9, "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 9, "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)	March 31, 2018	December 31, 2017
Net assets (liabilities), denominated in foreign currencies, excluding shareholders' equity and derivatives	$674,398	$ 401,966
Shareholders' equity denominated in foreign currencies (1)	353,954	345,743
Net foreign currency forward contracts outstanding (2)	(141,980)	(123,732)
Net exposures denominated in foreign currencies	$886,372	$ 623,977
Pre-tax impact of a hypothetical 10% appreciation of the U.S. Dollar against foreign currencies:		
Shareholders' equity	$(88,637)	$ (62,398)
Book value per share	$(0.65)	$ (0.46)
Pre-tax impact of a hypothetical 10% decline of the U.S. Dollar against foreign currencies:		
Shareholders' equity	$88,637	$ 62,398
Book value per share	$0.65	$ 0.46

(1) Represents capital contributions held in the foreign currencies of our operating units.

(2) Represents the net notional value of outstanding foreign currency forward contracts.

Although the Company generally attempts to match the currency of its projected liabilities with investments in the same currencies, from time to time the Company may elect to over or underweight one or more currencies, which could increase the Company's exposure to foreign currency fluctuations and increase the volatility of the Company's shareholders' equity. Historical observations indicate a low probability that all foreign currency exchange rates would shift against the U.S. Dollar in the same direction and at the same time and, accordingly, the actual effect of foreign currency rate movements may differ materially from the amounts set forth above. For further discussion on foreign exchange activity, please refer to "—Results of Operations."

Effects of Inflation

We do not believe that inflation has had a material effect on our consolidated results of operations, except insofar as inflation may affect our reserves for losses and loss adjustment expenses and interest rates. The potential exists, after a catastrophe loss, for the development of inflationary pressures in a local economy. The anticipated effects of inflation on us are considered in our catastrophe loss models. The actual effects of inflation on our results cannot be accurately known until claims are ultimately settled.

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OTHER FINANCIAL INFORMATION

The consolidated financial statements as of March 31, 2018 and for the three month period ended March 31, 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 ACGL 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 March 31, 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 March 31, 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 first 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)
1/1/2018 - 1/31/2018	10,718	$ 90.77	—	$ 446,501
2/1/2018 - 2/28/2018	9,786	88.94	—	$ 446,501
3/1/2018 - 3/31/2018	54,505	84.42	39,405	$ 443,202
Total	75,009	$ 85.92	39,405	

(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 March 31, 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.

The following table summarizes our purchases of Series C non-cumulative preferred shares for the 2018 first quarter:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid per Share
1/1/2018 - 1/31/2018	3,702,193	$ 25.00
Total	3,702,193	$ 25.00

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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 first 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.

Effective January 16, 2016, the Office of Foreign Assets Control of the U.S. Department of the Treasury adopted General License H which authorizes non-U.S. entities that are owned or controlled by a U.S. person to engage in certain activities with Iran so long as they comply with certain specific requirements set forth therein.

Certain of our non-U.S. subsidiaries provide 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, including the issuance of General License H, and consistent with General License H, we have been notified that certain of our policyholders have begun to, or will begin to, ship cargo to and from Iran, and that such cargo may include transporting crude oil from Iran to another country. 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. We intend for our non-U.S. subsidiaries to continue to provide such coverage to the extent permitted by applicable law.

ITEM 6. EXHIBITS

Exhibit No.	Description
10.1	Second Amendment to Employment Agreement, dated January 1, 2018, between Arch Capital Group Ltd. and John D. Vollaro†
10.2	Amendment to Employment Agreement, dated January 1, 2018, between Arch Capital Group Ltd. and Mark D. Lyons†
10.3	Second Amendment to Employment Agreement, dated January 1, 2018, between Arch Capital Group Ltd. and Constantine Iordanou†
10.4	Non-Qualified Stock Option Agreement, dated as of March 1, 2018, between Arch Capital Group Ltd. and Constantine Iordanou†
10.5	Non-Qualified Stock Option Agreement, dated as of April 9, 2018, between Arch Capital Group Ltd. and Marc Grandisson†
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 March 31, 2018 formatted in XBRL: (i) Consolidated Balance Sheets at March 31, 2018 and December 31, 2017; (ii) Consolidated Statements of Income for the three month periods ended March 31, 2018 and 2017; (iii) Consolidated Statements of Comprehensive Income for the three month periods

ended March 31, 2018 and 2017; (iv) Consolidated Statements of Changes in Shareholders’ Equity for the three month periods ended March 31, 2018 and 2017; (v) Consolidated Statements of Cash Flows for the three month periods ended March 31, 2018 and 2017; and (vi) Notes to Consolidated Financial Statements

† Management contract or compensatory plan or arrangement

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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. (REGISTRANT)
Date: May 9, 2018	/s/ Marc Grandisson Marc Grandisson President and Chief Executive Officer (Principal Executive Officer)
Date: May 9, 2018	/s/ Mark D. Lyons Mark D. Lyons Executive Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)